CMA
Competition & Markets Authority

Intercontinental Exchange and Trayport

A report on the completed acquisition by Intercontinental Exchange, Inc. of Trayport

17 October 2016

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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 is the largest exchange active in European utilities trading, and 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

[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.

venues' back-ends to clearinghouses allowing trades to be routed for clearing. 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 application 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 which 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.

Jurisdiction

6. 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 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 [70–80]% as a result of the acquisition. Therefore, we concluded that a 'relevant merger situation' had been created.

Market definition

7. We considered the relevant product and geographic market definitions. The Parties mainly operate at different levels of the supply chain. When assessing vertical effects of a merger, it is necessary to consider the effects of foreclosure on relevant downstream markets. 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.

8. 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 over-the-counter (OTC) executed trades.

9. 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.

10. 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 realise 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.

11. On the geographic market, we concluded that the effects of the Merger should be assessed on a European Economic Area-wide (EEA) basis.

Counterfactual

12. We considered what would have been the competitive situation in the absence of the Merger (the counterfactual). We concluded that absent the Merger, Trayport would have been sold and that the most likely alternative purchaser would not have raised competition concerns. While we have not carried out a competitive assessment of GFI and BGC's ownership of Trayport, the Parties and the majority of third parties' agreed that Trayport was not used strategically against GFI's rivals. In light of this, we are of the view that the conditions of competition under the counterfactual described above would not be materially different from the pre-Merger conditions of competition.

13. 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 (the New Agreement). Taking into account the pre-Merger relationship between the two companies and the timing of the signed agreement, we concluded that it was not sufficiently certain that the New Agreement, in its current form, would have been entered into absent the Merger, and therefore we did not include the New Agreement as part of the counterfactual.

Competition between ICE and its rivals

14. 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 enabling this competition.

15. All major brokers active in European utilities trading currently use Trayport's back-end BTS software. Aside from ICE, 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. All major clearinghouses, again with the exception of ICE, are connected to broker venues using BTS for the purposes of clearing OTC transactions through Trayport's Clearing Link.[3]

16. We saw evidence that pre-Merger ICE limited the extent to which it licensed Trayport's software. For example, ICE did not license Trayport's ETS, GV Portal or Clearing Link products but rather it primarily relied on its own front-end screen, WebICE, in order to achieve price distribution amongst traders. At the request of some trader customers, Trayport had historically developed a single software component to connect Trading Gateway to certain ICE exchanges for price listing purposes (also referred to as 'ICE Link'). We found that this lack of cooperation was a result of the Parties' long-term strategies through which they sought to channel trading volumes through their respective technology platforms. We concluded that Trayport was not a passive software supplier but it engaged in active strategies on behalf of its venue and clearinghouse customers, which are ICE's rivals, in order to ensure trading volumes continued to flow through the Trayport platform. We set out below a summary of the evidence we gathered on Trayport's role in enabling and promoting competition between ICE and its rivals.

[3] In May 2016, ICE and Trayport agreed terms for the licensing of its Clearing Link. The implementation of this agreement is currently suspended.

17. 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 trades are underpinned by the Trayport platform[4] and we found it is the critical input through which all participants (traders, venues and clearinghouses) in European utilities interact.[5]

18. We first assessed the factors that drive traders' choices during the lifecycle of a trade. We found that liquidity and contract price[6] were the primary drivers of traders' choice of venue, and that execution fees including discounts, rebates and other incentives were important to this choice. For clearing, we found that margin[7] and open interest[8] were the key drivers of choice and that clearing fees were also a factor. We gathered mixed evidence on the importance of the ease of clearing OTC trades and the availability of an STP link, but concluded that it was an important factor in winning OTC cleared volumes from incumbent clearinghouses.

19. We then assessed competition between ICE and its rival venues, and between ICE and its rival clearinghouses. In doing so, we took into account assessments of competition between trading venues in previous cases and looked at trading volumes in each relevant European utilities asset class. 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.

20. Our assessment of rivalry between ICE and alternative venues and clearinghouses in European utilities, indicated that ICE is the leading exchange in the European gas and emissions asset classes (including in the UK), across a number of products, and that it competes head-to-head with rival exchanges, clearinghouses and brokers in these asset classes, and also in the European power asset class where it holds a smaller position. ICE also faced the threat of potential head-to-head competition from rival exchanges and clearinghouses in asset classes where their products are more closely correlated across all European utilities asset classes. We also found that there is dynamic competition between venues and clearinghouses which

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[4] This includes all power, gas, coal, emissions and freight futures and forwards as reported on Trayport's website.
[5] This was consistent with our own analysis which indicated that [70–80]% of European utilities trades flowed through Trayport's front-end screen. This figure does not include hybrid trades in which traders and brokers use on-screen prices to facilitate voice brokered trades.
[6] 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 contract 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.
[7] 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.
[8] The total number of outstanding (not closed or delivered) options and/or futures contracts that exist on a given day.

takes place through the introduction of new products and innovative trading solutions, including seeking to develop competition in future markets.

21. We also found that there is dynamic competition between venues and between clearinghouses which takes place through the introduction of new products and innovative trading solutions, including seeking to develop competition in new markets. Innovation and first-mover advantage is an important aspect of competition. As a result of network effects liquidity becomes 'sticky' once significant volumes have gathered on a venue and it becomes more difficult to shift. Therefore, time to market and first-mover advantage is an important competitive factor when seeking to implement an innovative solution or establish a new market. Moreover, as OTC markets become more liquid the products concerned become more suitable for exchange-based trading. Accordingly, we found that exchanges develop vanilla or copycat products and compete to become the first exchange on which liquidity gathers.

22. This competition between ICE and its rivals to attract liquidity delivers a number of benefits to traders and these influence traders' choice of venue and clearinghouse. These benefits include: price incentives, such as fee holidays and trader incentive schemes (including market maker agreements and rebates); new products and innovative trading solutions; and for clearing, margin offset arrangements to reduce traders' costs and the provision of STP solutions to ease the process of clearing OTC trades.

23. We assessed the role of Trayport in enabling this competition. We did this in two stages: (i) we assessed whether ICE's rivals were dependent on Trayport to compete effectively with ICE; and (ii) we considered how Trayport promotes and enables dynamic competition through specific initiatives. For this purpose we analysed volume data, examined internal documents and we considered the views of the main and third parties.

24. All third party venues and clearinghouses told us that the Trayport platform was extremely important to their success. Our analysis of the evidence showed that Trayport's services were used by almost all traders, venues and clearinghouses operating in European utilities trading. Trayport's front-end screen penetration rates amongst traders were by far the most significant at 89% (including Trayport dependent screens), with ICE's front-end screen the next highest at 44% and the next most significant with only 6%. Coupled with this, we examined trade volume data which indicated that venues and clearinghouses were very heavy users of the Trayport platform in order to access traders and generate liquidity. In contrast, ICE was the only venue with a front-end screen with significant penetration amongst traders and, as such, it was not as dependent on Trayport to access traders and to generate

liquidity, particularly, in those asset classes where it already has a strong position.

25. We also considered whether there were any effective alternatives to Trayport. We found that existing alternatives to Trayport's front-end and back-end software were weak because the Trayport platform offers uniquely integrated access to traders' and brokers' liquidity thereby resulting in significant network effects. Alternative front-end screens either had to sit on top of the Trading Gateway in order to provide an aggregated view of venues' liquidity (ie were Trayport dependent) or, with the exception of WebICE, had limited penetration amongst traders. Additionally, we found that alternative back-ends for brokers using BTS were ineffective because these could not communicate with the Trayport front-end, as a result of Trayport's Closed API, and therefore had no access to Trayport's pools of aggregated liquidity; a switch away from BTS would result in their losing access to the Trayport platform's network effects. The same applied for exchanges using Trayport's ETS back-end. For those exchanges with their own back-ends or matching engines, we found that ICE's rival exchanges were still dependent on GV Portal to achieve significant distribution amongst traders for some asset classes, and when competing in new asset classes. As such, we found that for there to be an effective alternative to the Trayport platform a rival would need to offer an integrated equivalent and it would need to engineer a coordinated shift in liquidity away from Trayport. We found that this was likely to be costly and very difficult to achieve because of the difficulty of co-ordinating liquidity shifts. As a result, we concluded that barriers to entry and/or expansion were high.

26. Taking into account all this evidence, we concluded that ICE's rival venues were dependent on Trayport to compete effectively with ICE. Clearinghouses were also dependent on Trayport but to a lesser extent than venues.

27. With respect to Trayport's role in enabling and promoting dynamic competition, we concluded that Trayport was active in its efforts to influence competition between trading venues and between clearinghouses in order to ensure that volumes flow through the Trayport platform. The key factors through which Trayport enables and promotes competition between venues and clearinghouses include:

    (a) investing in understanding market dynamics and focusing its resource on those Trayport customers (or prospective customers) which are thought likely to succeed, thereby driving dynamic competition and market structures in favour of the Trayport platform; and, relatedly,

    (b) supporting its customers' efforts to shift traditionally voice brokered markets (or asset classes) or nascent markets as they transition through

the electronic trading evolution process and become highly liquid. In today's market, its efforts in this regard are particularly relevant to the oil asset class where its efforts to introduce electronic platforms can be viewed as a competitive threat to ICE's strong exchange offering.

28. We considered that Trayport's role in enabling and promoting this dynamic competition was particularly important.

29. Having concluded that ICE's rival venues and clearinghouses were dependent on Trayport to compete effectively with ICE in European utilities asset classes, and that Trayport played an important role in enabling and promoting dynamic competition between ICE and its rivals, we explored in our assessment of the competitive effects of the Merger whether ICE could use its ownership of the Trayport platform to substantially lessen competition.

Competitive effects of the Merger

30. We primarily considered vertical theories of harm: we assessed 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.

Ability to foreclose

31. Firstly, we assessed the merged entity's ability to foreclose ICE's rivals. ICE, as the sole owner of Trayport, would have the ability to control its strategic direction, innovation priorities and levels of investment. We concluded that in the longer term ICE would have the ability to direct Trayport's strategy and commercial priorities in such a manner that would benefit ICE to the detriment of its rivals. We considered this was particularly significant in the circumstances of this case. ICE's rival venues and clearinghouses depend on Trayport as a critical input into their execution and/or clearing service offerings, and the Trayport platform is essential in order for these rivals to compete effectively with ICE. Pre-Merger Trayport was also actively engaged in strategies to promote dynamic competition between venues and clearinghouses with a view to creating new markets and/or to shifting nascent or traditionally voice brokered markets onto electronic trading models. We concluded that ICE's control of such a critical input into its rivals' activities, including the option to stop supplying Trayport's services, clearly gave it the ability to foreclose ICE's rivals and prevent them from competing effectively.

32. Third parties also identified a number of mechanisms through which Trayport could weaken ICE's competitors and reduce competition as part of a

foreclosure strategy. These included 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, providing ICE with access to 'soft' confidential information regarding its rivals' strategic priorities, and delaying and hampering the ability of rivals to enter new markets by delaying the listing of new products on the Trayport platform. We concluded that these mechanisms either in isolation or in combination could be used as part of a broader foreclosure strategy. We also concluded that the contractual arrangements in place between Trayport and its venue and clearinghouse customers were unlikely to sufficiently protect ICE's rivals from all such strategies.

33. Having concluded that the merged firm would possess the ability to foreclose ICE's rivals, we next considered its incentives to do so.

Incentives to foreclose

34. When considering the merged entity's incentives to carry out a 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.

35. We identified five potential benefits to ICE's execution and clearing activities of using Trayport to engage in total and/or partial foreclosure of ICE's rivals. First, ICE would over time likely be able to further grow its position in products where it already has a substantial presence at the expense of its rivals. Second, total and/or partial foreclosure of ICE's rivals would help to prevent ICE's rivals from challenging to win ICE's volumes in the future in products where it already has a strong position. Third, where there are pre-existing long-term industry trends, ICE would be able to use its control of Trayport to accelerate these and direct them in its favour. Fourth, total and/or partial foreclosure could over time help ICE to obtain volumes from its rivals in those existing products where it has little or no current position, for example German power. Fifth, ICE's control of Trayport would likely help it to gain control of new markets and segments as these emerge in future, which is particularly relevant given that dynamic competition is important in this industry, and that first-mover advantages exist. 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 found

significant gains for the merged firm which would likely result from a weakening of ICE's rivals.

36. We turned to the costs of implementing a foreclosure strategy. In doing so, we considered whether a foreclosure strategy could be implemented by way of total or partial foreclosure. We described total foreclosure as taking the form of excluding existing venues and clearinghouses from accessing the Trayport platform in its entirety. Our view is that a total foreclosure strategy would be less likely because of the costs to the underlying Trayport business model. Such a strategy would result in the loss of revenues currently earned from venues and clearinghouses, and would weaken the network effects associated with the Trayport platform.

37. However, we found that the benefits of partial foreclosure would outweigh the costs. We reached this view on the basis that the costs in terms of lost revenues from Trayport's business activities would likely be small because ICE's rivals are highly dependent on Trayport, with no effective current alternatives to its services. Moreover, the fact that partial foreclosure would take the form of strategic and incremental changes over time also means that it would not fundamentally undermine the Trayport platform.

38. We were not persuaded by the Parties' arguments that traders would retaliate against ICE in response to a partial foreclosure strategy. If traders sought to punish ICE, there would be a cost to firms that sought to switch away from ICE's services to alternatives they had previously rejected. This is particularly so given that, as a result of foreclosure, in many cases the attractiveness of these alternatives would be diminished because ICE's rivals rely on Trayport. In essence, such retaliation would require traders to respond to a decrease in the attractiveness of ICE's rival venues and clearinghouses by switching to using them more – the opposite of the reaction we would expect.

39. In response to the Parties' submissions, we concluded that 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. ICE is also the only execution venue or clearinghouse with significant front-end screen penetration amongst European utilities traders meaning that any reduction in the quality of Trayport's services would more significantly affect its rivals, which rely on Trayport as a critical input to their business, and this is a protection that Trayport's previous owners would not have enjoyed. Moreover, ICE's closest competitors – and therefore its main targets for foreclosure – are other exchanges which represent a less significant proportion of Trayport's revenues as compared to brokers. Finally,

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.

40. Lastly, for our incentives analysis, 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, and the number of assumptions it was necessary to make to carry out a quantitative assessment, we did not attach much weight to this evidence. However, as a cross-check, we found that all of the scenarios considered in our quantitative assessment supported our qualitative assessment.

41. Having concluded that the merged entity would have both the ability and the incentive to foreclose ICE's rivals, we then considered whether such a foreclosure strategy would have an adverse effect on competition.

Effects of foreclosure

42. We 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 result in an immediate loss of rivalry that would have an impact on the terms offered to traders, including a potential increase in execution or clearing fees, a degradation in service offering or reduction in discounts, rebates and fee holidays, and fewer 'market maker' agreements offered to traders in order to retain or generate liquidity on a particular venue.

43. In the longer term, we 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. This may result in liquidity shifting towards ICE in asset classes where it is currently weak or not present, or may prevent ICE's rivals from shifting liquidity away from ICE in asset classes where it is currently strong. 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' dependence on Trayport's Clearing Link was less pronounced.

44. Of particular importance, we considered that a loss of competition between ICE and its rivals would have a longer term detrimental consequence on 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 also considered that under ICE ownership Trayport would no longer seek to promote competition and shape market structures in favour of its venue customers, and in competition with ICE. 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.

45. 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, in particular Trayport's activities may more strongly constrain ICE's offering whilst the constraint posed on Trayport by ICE in this context may be weaker. 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 found that there would likely be a reduction in competition but on its own this was not sufficient to represent a substantial effect.

46. Based on an assessment in the round of all theories of harm, and taking into account the likely effects overall, we 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.

47. We were therefore required to decide whether action should be taken to remedy, mitigate or prevent the SLC or any adverse effect arising from the SLC.

Remedies

48. In our notice of possible remedies (Remedies Notice), we sought views on the following possible remedy options:

    (a) a structural remedy requiring the divestiture of Trayport by ICE (the Divestiture remedy);

    (b) a behavioural remedy requiring the Parties to provide Trayport's products and services on fair, reasonable and non-discriminatory (FRAND) terms (the FRAND remedy); and

(c) a measure requiring Trayport to open up its API and allow third party software to connect to Trayport's software platform components (the Open API measure).

49. In response to our Remedies Notice, the Parties proposed a package of behavioural remedy measures (the Parties' Remedy Proposal), which included access to Trayport's software on FRAND terms combined with measures to ensure operational separation of Trayport from ICE and a confidentiality firewall.[9]

50. In dynamic and evolving sectors such as those in which ICE and Trayport operate, we concluded that it was inherently difficult to specify FRAND terms that would cater for all eventualities. This was consistent with the views of third parties. Trayport's customers have different development requirements and needs, and Trayport's products and services could change significantly over time. As such, and consistent with third parties' views, prescribing FRAND terms that would remain relevant would be difficult (if not impossible) and carry significant risks, including:

(a) Greater scope for circumvention, as over time market changes could result in a FRAND remedy becoming less effective.

(b) Monitoring risks because it would not be possible for customers to identify if, and when, they had been unfairly treated, and this would cover both price and non-price factors.

(c) Enforcement risks because we considered that any harm suffered was likely to be immediate, and other than unfair pricing, it would be difficult, or impossible to quantify the harm caused, eg loss of future potential revenues.

51. We therefore concluded that a FRAND remedy would not be effective.

52. We considered separately the Parties' proposals on the operational separation of Trayport and confidentiality firewalls. We concluded that ICE continuing to hold Trayport as a wholly-owned subsidiary was incompatible with the aim of achieving autonomy from ICE for a newly-formed Trayport board. Trayport would remain under ICE's control and influence. For completeness, even if we had concluded the Parties' proposals on operational autonomy were effective there would be a need for ongoing monitoring and compliance over this remedy. We also concluded that there would be deficiencies with the proposed confidentiality firewall because whilst a

[9] See the Parties' written submission on their remedy proposal.

confidentiality firewall may prevent ICE and Trayport from sharing customer-specific market data, it would be less effective in preventing any transfer of 'soft' confidential information regarding Trayport's resource priorities and rivals' interactions.

53. Considering the Parties' Remedy Proposal in the round, we concluded that there were specification, circumvention and monitoring and enforcement risks. The difficulties of specifying a FRAND remedy would not be cured by ICE's proposed governance of Trayport, which would remain under ICE ownership and influence, and there would remain significant room for interpretation in applying FRAND terms which would increase the risk of circumvention. We also noted that these measures would need to be permanent and would require ongoing monitoring and enforcement on an indefinite basis.

54. We considered the other two options set out in our Remedies Notice: the Divestiture Remedy and the Open API remedy.

55. With respect to the Open API remedy, we concluded that the risk profile associated with this remedy would be unacceptable given the uncertainty regarding its design and operation, and whether, first, alternatives to Trayport would emerge, and second, whether they would indeed represent a sufficient and viable constraint to Trayport that would address all of the concerns we have identified. We therefore concluded that an Open API measure would not represent an effective remedy to the SLC and its resulting adverse effects. We also did not consider that a FRAND remedy combined with an Open API measure would be an effective remedy, as suggested by some third parties.

56. We considered the Divestiture Remedy. We considered the scope of any divestiture package and concluded that a partial software divestiture would not comprehensively address the SLC given that ICE would still retain control over a critical component of the Trayport platform. We also considered that a partial software divestiture remedy could result in either uncertain or unintended consequences, and a more complex, drawn-out and costly separation and divestiture process.

57. We concluded the risk of not finding a suitable purchaser is low based on: (a) the level of interest from potential purchasers in the previous (and relatively recent) Trayport sale process; and (b) the strength of Trayport's fundamentals as an investment proposition, in particular its market position and business model. We did not rule out any types of purchaser but instead will consider suitability on a case-by-case basis against the purchaser suitability criteria set out in our guidance.

58. Therefore, we concluded that a full divestiture of Trayport was the only effective remedy for the SLC we identified.

59. We also concluded that an agreement entered into by ICE and Trayport during the course of our investigation, which is currently suspended, should be unwound because it is uncertain whether this agreement would have been entered into on the same terms with Trayport under alternative ownership. We do not see any constraint on this or similar agreements being re-negotiated between ICE and Trayport's new owner in the future.

60. We did not identify any relevant customer benefits that would mitigate the SLC we identified. We also concluded that full divestiture would be proportionate given that the SLC would adversely affect the supply of trade execution services to energy traders and trade clearing services to energy traders across all European utilities asset classes for which trading takes place in the EEA, including in the UK. Moreover, we found that a partial foreclosure strategy would affect all of Trayport's products and services, including its strategic role in enabling and promoting competition which would be long lasting, and as such the scope of the SLC was not limited to only certain Trayport software products. Finally, we note that for completed mergers, the CMA will not normally take account of the costs or losses that will be incurred by the merged parties as a result of a divestiture remedy.[10] The Merger was completed at the Parties' own risk and we do not consider there are any exceptional circumstances in this case.

61. We therefore concluded that full divestiture of Trayport would be effective in remedying the SLC found. In our judgment this represented as comprehensive a solution as was reasonable and practicable to the SLC that we found and the adverse effects resulting from it and found it to be proportionate.

[10] *Merger Remedies: CC8* (November 2008), paragraph 1.10. (Save for Appendix A, the Merger Remedies Guidelines have been adopted by the CMA (see Annex D to CMA2, Mergers: Guidance on the CMA's Jurisdiction and Procedure, January 2014)

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 findings, published and notified to the Parties in line with the CMA's rules of procedure.[11] 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

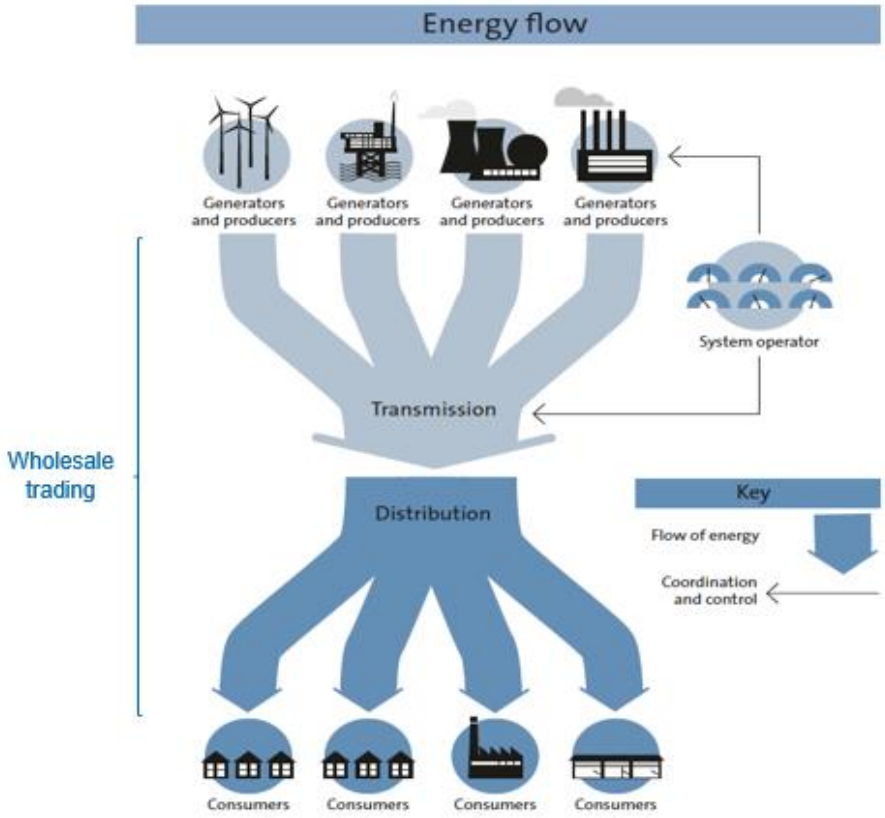
2.1 The Parties operate within wholesale energy trading. In this section, we provide by way of introduction a high-level overview of wholesale energy trading before describing in more detail the respective roles of the Parties and the services they provide. A number of the aspects of wholesale energy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

[11] Rules of procedure for merger, market and special reference groups, (CMA17) Rule 13.

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 the 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.[12] 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.[13] 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,[14] 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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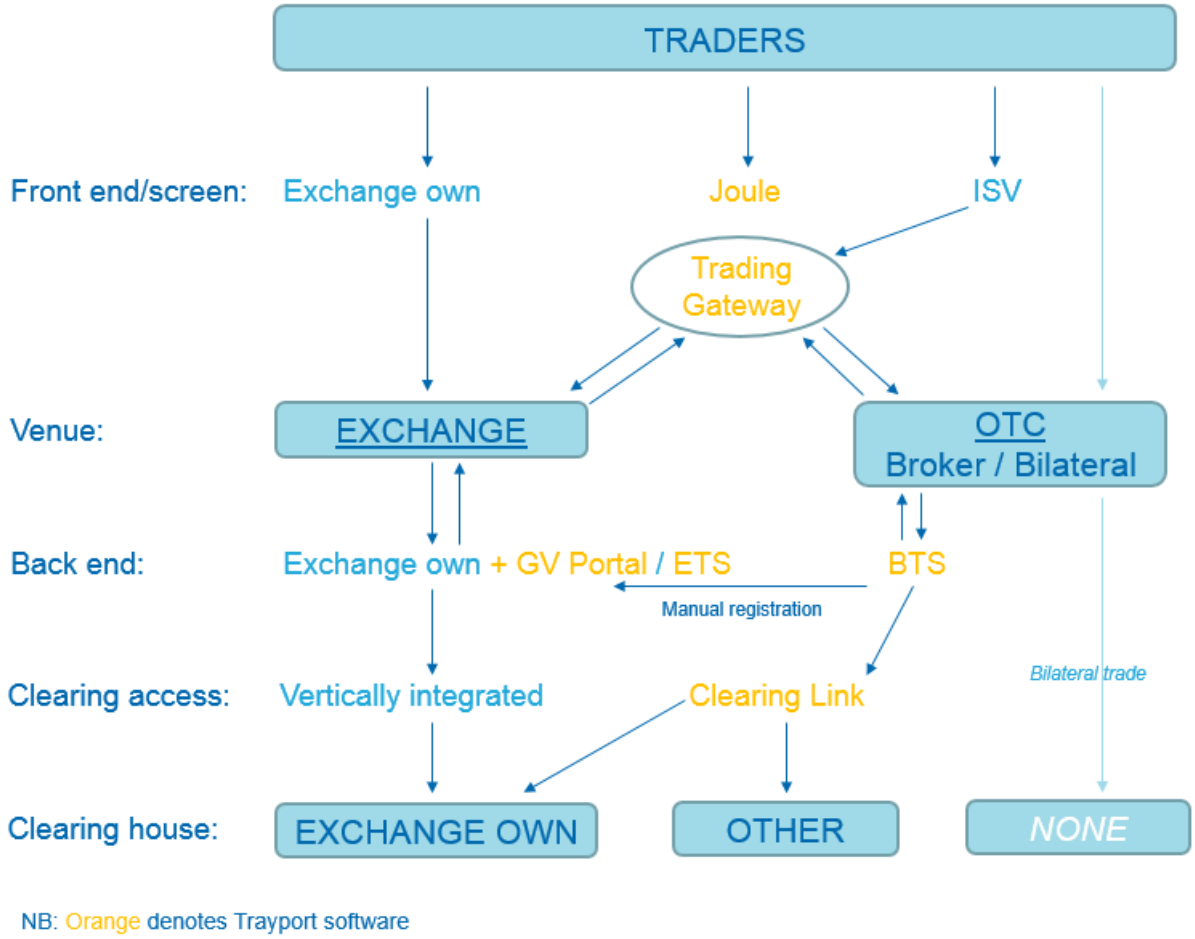
[12] The term 'market' is used to refer to the physical location where products and services are bought and sold by individuals or companies in real time, as well as to the abstract place in which the products and services are theoretically traded with settlement occurring at a later date, often involving intermediaries concerned with the participants and performance of the latter usage of the term.
[13] 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.
[14] 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. (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.)
Note: For the avoidance of doubt, brokered trades are also conducted without being sent for clearing.

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

Traders[15]

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

[15] Throughout our final report 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.[16] 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.[17] 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.[18]

(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 Traders can follow a large long-term trade with a series of smaller trades which are offset against their initial position. For example, a gas retailer can contract to buy a set amount of gas at regular intervals

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[16] 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.
[17] There are some variations to this definition – eg index/floating forwards – but most are fixed price.
[18] See ICE, Exchange Futures for Physical (EFPs) for ICE WTI Crude Futures.

(daily/weekly/monthly) over a set period (month/quarter/six months) for the same price each period. The trader benefits from a regular supply at a fixed cost. However, 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'[19] (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 its 'back-end'[20] 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.[21]

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

[19] A front-end screen facilitates price discovery and enables a trader to enter quotes and initiate the execution of trades on electronic trading venues.
[20] 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.
[21] 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.

words, the commodity for which an individual trader performs the most trades will dictate which front-end screen(s) that trader will need.

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.[22] 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.[23]

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.

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[22] This is typically a monthly fee, not volume related.
[23] 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 enable trades within the firm, a piece of software can be purchased which allows the traders to see each other's trade requirements, without the necessity of placing them on the wider public market.

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:

(a) ICE;

(b) CME Group;[24]

(c) EEX Group;[25] and

(d) Nasdaq.[26]

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.[27] 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

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[24] CME Group website.
[25] EEX Group website. Note also Deutsche Börse 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.
[26] See 'Options & futures trading at Nasdaq Nordic' on the Nasdaq website.
[27] Exchange trading also tends to occur within standard trading hours. Exchange trading can occur outside of these hours but might incur higher fees.

(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 execute the trade.[28] 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 There is an additional type of exchange trade called a 'block future trade' which is a one-off trade, which may be for very large volumes, and which is privately negotiated rather than anonymously matched, distinguishing it from standard trades. The trade is first arranged off exchange by the counterparties in accordance with the exchange's special block trading rules. It is then registered on the exchange and cleared normally. It is subsequently equivalent to any other standardised futures trade made by the parties. Block trades are used to allow a large trade to be made and cleared at a single reasonable price without distorting the market and also to allow private negotiation with a particular known counterparty, combining the advantages of normal exchange and broker trading.

2.33 Exchange trading is highly regulated. The regulation provides guidance and clarity around the timing of trades, trade confirmation and reporting, use of

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[28] '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.

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

2.34 Trades entered into by two counterparties bilaterally or via a broker are known as OTC trades.

2.35 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.

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

- *Broker trading*

2.37 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.

2.38 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*

2.39 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.

2.40 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 an STP link.

2.41 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.[29]

2.42 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.[30] The preferred exchange and clearinghouse to be used is typically the choice of the trader.

2.43 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 subsection 'Broker non-cleared' below).

2.44 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*

2.45 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.

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[29] See 'Energy Trading and Risk Management: It's Time for STP' on the DerivSource website.
[30] The Parties noted that this was not always the case.

2.46 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*

2.47 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 as there is no clearinghouse or other third party involved to secure against default by either party.

2.48 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

2.49 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.

2.50 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 counterparty, 'CCP') interposes itself between the two trading parties, becoming the buyer to every seller and the seller to every buyer.

2.51 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.[31]

2.52 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

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

take into account any other positions held open with the clearinghouse such that amounts receivable and amounts payable can be netted.

2.53 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.

2.54 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

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

2.55 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.

2.56 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.

2.57 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

2.58 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.

2.59 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.

2.60 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.

2.61 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, which 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[32]

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

(a) the Regulation on OTC derivative transactions, 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

[32] Following the recent UK referendum on whether the UK should leave the EU it is possible that there could be significant changes to the regulatory framework that applies to UK financial markets in the future. However, we note 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. We also note that many of the relevant European laws have been transposed into UK law.

2014/65/EU) and the Markets in Financial Instruments Regulation (Regulation 600/2014).

2.63 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.

2.64 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 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.

2.65 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.

2.66 The clearing exemption for wholesale energy products and an exemption for trading below set volumes (the ancillary services exemption) 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.

2.67 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 7.69 and in Section 7.

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

Use of electronic platforms to match buyers and sellers

2.69 In its recent decision, *Tullett Prebon/ICAP,*[33] 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.

2.70 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, 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.

2.71 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 pre-Merger 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

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

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, including to customers in the UK. ICE's exchanges can also be accessed via 'conformed' 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 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 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 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.[34] 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 application 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). 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:

[34] 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 above, and the functionality of each piece of software is explained below.

Joule/Trading Gateway

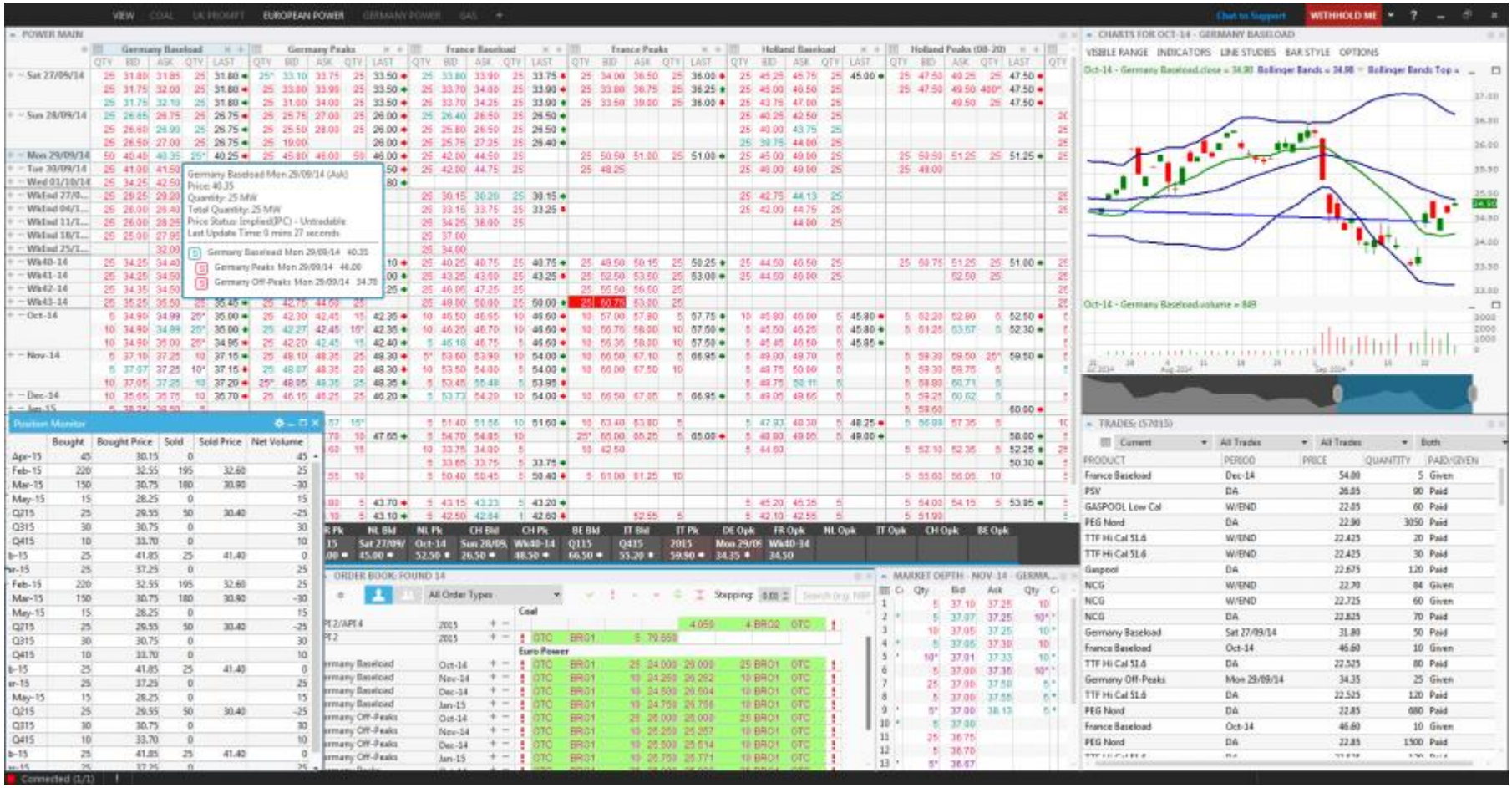
3.16 Historically, if a trader wanted to trade across multiple venues and monitor prices on those venues, it was necessary for that trader to have multiple screens – one for each venue.

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 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 its 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.[35] 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.

[35] 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 enables the matching of orders under the relevant rules of that trading venue.[36]

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.[37] 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.'[38] 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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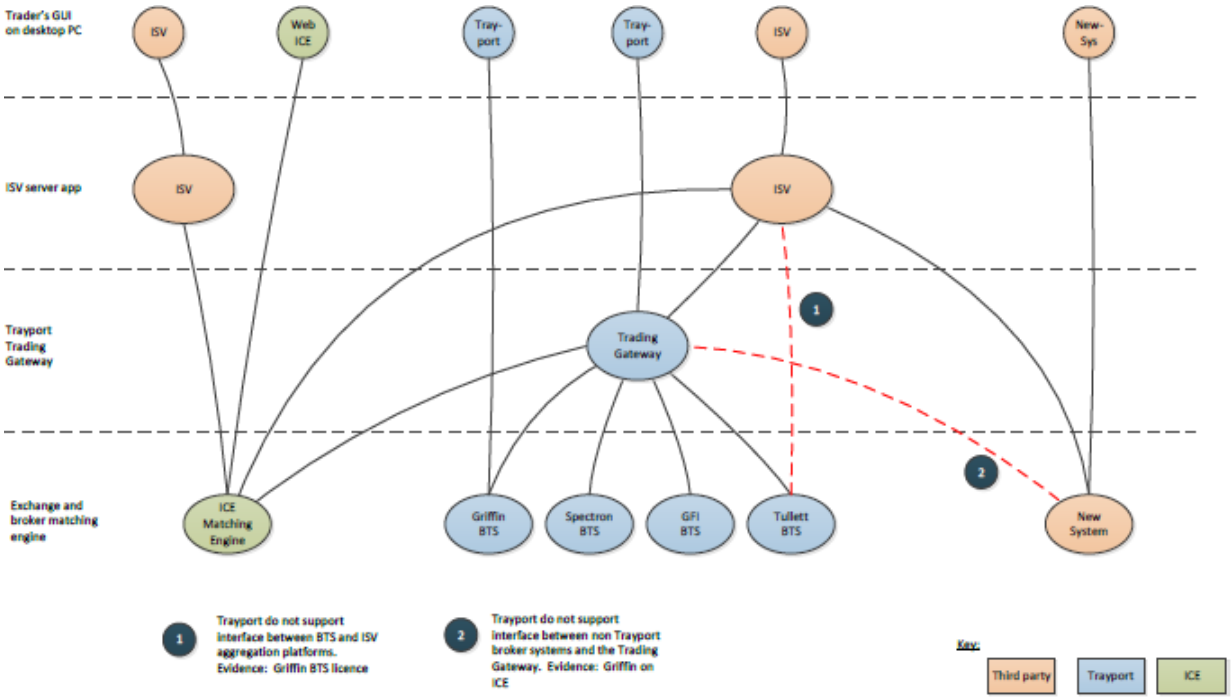
[36] Joule/Trading Gateway does not allow orders to be matched across trading venues; orders can only be matched within the same trading venue.
[37] See GlobalVision Trading Gateway on the Trayport website.
[38] See website for Trayport's products.

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



Source: Griffin.

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.

3.24 For the avoidance of doubt, Trayport's Closed API strategy was a feature of the market pre-Merger and it is not Merger specific.

Exchange software: ETS and GV Portal

3.25 Trayport describes ETS as 'a matching engine that enables cleared and bilateral trading, market operations and data distribution for exchanges.'[39] ETS is the equivalent software to BTS made available to exchanges. As with

[39] See website for Trayport's products.

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

3.26 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 benefiting from the increased penetration of their venues' prices amongst traders.

3.27 All of the major exchanges active in European utilities trading[40] either use ETS or connect to Trading Gateway from their own back-end matching software via GV Portal.

Clearing Link

3.28 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.'[41] 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.

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

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.

Ancillary services

3.29 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 license one of Trayport's core products. In 2015, Trayport generated approximately £[✂] from the provision of these ancillary services.

The Trayport platform

3.30 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 realise 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.

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.[42] ICE also said that ICE's internal papers supported ICE's stated rationale and showed a clear intention to continue to operate and grow Trayport as a distinct business within ICE.[43]

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.[44]

4.4 ICE also submitted that public statements made by its CEO, Jeffrey Sprecher, demonstrated 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.[45]

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;[46] and

(b) either the 'share of supply test' or the 'turnover test' (as specified in that section of the Act) is satisfied.[47]

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[42] ICE/Trayport initial submission, paragraph 3.1.
[43] ICE/Trayport initial submission, executive summary.
[44] ICE/Trayport initial submission, paragraph 3.2.
[45] ICE/Trayport initial submission, paragraphs 3.3–3.7.
[46] As set out in section 24 of the Act.
[47] 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.

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'.[48]

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.[49] 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.[50] 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. In accordance with the *Merger Assessment Guidelines* 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

[48] Section 129(1) of the Act.
[49] Section 26 of the Act.
[50] Section 23(2)(b), section 23(3), and Section 23(4) of the Act.

analysis.[51] The relevant point in time for calculation of the share of supply is immediately before the reference is made.[52]

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).

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 contracts. This was an increment of [70-80]% as a result of the acquisition.[53] 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 concluded 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,[54] 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.

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[51] Merger Assessment Guidelines: CC2, September 2002, paragraph 3.3.5. , paragraph 3.3.5. (The Merger Assessment Guidelines have been adopted by the CMA (see Annex D to CMA2, Mergers: Guidance on the CMA's Jurisdiction and Procedure, January 2014)
[52] Section 23(9) of the Act.
[53] These figures are computed using overall (ie on-exchange and OTC) executed volumes. This is based on data from third parties (namely EEX, Nasdaq, Pegas 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).
[54] As defined in section 27 of the Act.

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 (UILs) are sought.[55] If the parties indicate that they do not intend to give UILs, the extension ends ten working days after receipt by the CMA of the parties' statement.[56] This means 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 UILs and the reference was made on 3 May 2016, ie within the four-month deadline.

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

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).[57]

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);

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[55] See section 25(4) of the Act.
[56] See section 25(5)(b) of the Act.
[57] CC2, paragraphs 5.2.1 & 5.2.2.

(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.

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 realise 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'.[58] We refer to these 'indirect' network effects simply as 'network effects' throughout our final report.

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 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

[58] 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.

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.[59] 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. The evidence we gathered on competition between clearinghouses is set out in Section 7. Relevant factors include clearing fees, 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.

[59] ICE/Trayport initial submission, paragraph 5.4.

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 7.153 to 7.166 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 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 member states (eg NBP gas in the UK) these physical products are traded and indexed on an EEA-wide basis.

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

Conclusions on the relevant markets

5.30 We assessed the effects 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 energy 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'.[60] 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.[61] The counterfactual is an analytical tool used in answering the question of whether the merger gives rise to an

[60] CC2, paragraph 4.3.1.
[61] CC2, paragraph 4.3.6.

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.[62]

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).[63]

6.3 ICE also submitted that the substantive assessment of the acquisition should be based on the premise that ICE would collaborate with Trayport and support its business model whether or not ICE owns Trayport. It submitted that ICE had decided before the acquisition to make full use of Trayport's network of connectivity with traders and brokers.[64]

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)[65] had been accepted by the majority of GFI shareholders and that GFI was to become a division of BGC.[66]

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.[67] 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.

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[62] CC2, paragraph 4.3.1.
[63] ICE response to issues statement, slide 3.
[64] ICE response to issues statement, slide 3.
[65] GFI acquired Trayport in 2008.
[66] BGC announcement (27 February 2015).
[67] BGC announcement (16 November 2015).

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 that 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. Ten 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 access product called CME Direct.[68] 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.[69]

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, Trayport would have been sold and the most likely alternative purchaser was unlikely to raise competition concerns. While we have not carried out a competitive assessment of GFI and BGC's ownership of Trayport, the Parties (see paragraph 8.138 to 8.142 below) and the majority of third parties agree that Trayport was not used strategically against GFI rivals.[70] In light of this, we are of the view that the conditions of competition under the above described counterfactual would not be materially different from the pre-Merger conditions of competition.

ICE collaboration with Trayport

6.11 On 11 May 2016, post-Merger, ICE and Trayport entered into a new interface development and support agreement relating to the display of

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[68] 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 US, and further explained that for the trading of European utility products in Europe, CME used, and was dependent on, the Trayport platform.
[69] CC2, paragraphs 4.3.22–4.3.23.
[70] For example, see ICAP hearing summary, paragraph 32, Engie hearing summary, paragraph 20, and RWEST hearing summary, paragraph 32. Only Tradition raised concerns of a lack of neutrality under GFI ownership and it provided one example but noted it had no impact on the market (see Tradition hearing summary, paragraph 31).

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).[71]

6.12 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 situation

6.13 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. This position differs from other third party exchanges which make their prices available to traders on Joule/Trading Gateway either by licensing GV Portal or by using Trayport's ETS back-end. Other third party exchanges also license Trayport's Clearing Link through which their products (or contracts) are made available on broker back-ends and thereby enables OTC broker intermediated transactions to be routed straight-through to a clearinghouse for clearing.

6.14 As a result of ICE not licensing GV Portal (or using Trayport's ETS back-end), in order for ICE's prices to be displayed on Joule/Trading Gateway, ICE told us that Trayport had to build connectivity to ICE products as an 'ICE approved ISV' instead (ie build a separate link) and that it had developed a single software component to connect Trading Gateway to the ICE matching engines (also referred to as 'ICE Link'). Trayport charged its Joule/Trading Gateway customers directly for this connectivity.

6.15 Therefore, prior to the signing of the New Agreement, whilst there was connectivity available between Joule/Trading Gateway clients and the ICE central limit order book (CLOB) and subsequently to the ICE Endex CLOB[72] through ICE Link, this connectivity was only available for certain asset classes and only if customers paid Trayport separately for an ICE Link licence (ie at an additional cost).[73] [✂]. The arrangements between the trading company and ICE were not transparent to Trayport. [✂].

[71] ICE first informed the CMA of this development on 16 May 2016 when it submitted its fortnightly compliance statement under the Order.
[72] Following ICE's acquisition of a majority stake in APX Endex, in 2013, and its re-launch as ICE Endex.
[73] Many of the ICE Link clients were deployed locally meaning that Trayport did not have a contractual right to access their systems. As such, Trayport holds a contract with these customers in respect of licensing the customer's use of ICE Link. This connectivity dates back to December 2004.

6.16 With the advent of the New Agreement the following would change as compared with the situation prior to this agreement being entered into:

(a) A greater number of IFEU and ICE Endex products would be displayed on Joule/Trading Gateway and made available to all traders licensing the Joule/Trading Gateway. ICE would be paying consideration to Trayport for this service whereas previously ICE did not pay for connectivity in the same way as other venue clients of Trayport.

(b) ICE has taken a licence for Trayport's Clearing Link making available its ICE Clear Europe products to brokers using Trayport's BTS and thereby enabling the STP of broker intermediated transactions for clearing.

Parties' views on historical lack of cooperation

6.17 ICE told us that [✂].

6.18 [✂].

6.19 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 Europe, 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 7.107 to 7.111 and 7.172 to 7.182) and it is against this backdrop that we assessed the Parties' evidence on their reasons for entering into the New Agreement in May 2016.

ICE's rationale for entering into the New Agreement

6.20 [✂]:

(a) [✂].

(b) [✂].

(c) [✂].

6.21 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.

6.22 The Parties submitted that the key commercial terms were essentially agreed via an exchange of emails in May 2015, and that these terms were virtually identical to those contained in the New Agreement. However, we note that at the time of the acquisition:

(a) the negotiations had not advanced beyond discussions and email correspondence;

(b) these discussions were relatively high level, and there was no draft agreement available reflecting the Parties' position at that point in time; and

(c) no final agreement had been reached as to which ICE utilities markets were to be included as part of any deal.

6.23 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.

6.24 Trayport told us it [✂].

ICE's submission on the New Agreement

6.25 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.

6.26 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.

6.27 ICE also submitted that historical tensions between ICE and Trayport did not provide evidence that it was not sufficiently certain that the New Agreement would have been entered into because these tensions were no longer relevant in a more settled regulatory environment – a situation which pre-dated the acquisition – and that this was evidenced by ICE's change in commercial stance towards Trayport which had resulted in its attempts to secure a new contract pre-acquisition.

6.28 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.

Conclusion on the New Agreement

6.29 We considered the above evidence carefully. We are 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 certain in order to be included as part of the most likely counterfactual, particularly, in light of there being no draft agreement, including no final agreement on the scope of ICE products to be listed on Trayport, and the Parties' previous reluctance to cooperate (the evidence available in the Parties' internal documents demonstrates strategic reasons for their lack of cooperation see paragraphs 7.107 to 7.111 and 7.172 to 7.182 below).

6.30 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.

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

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

Conclusion on the counterfactual

6.33 We concluded that absent the Merger Trayport would have been sold and that the most likely alternative purchaser would not have raised competition concerns. While we have not carried out a competitive assessment of GFI and BGC's ownership of Trayport, the Parties and the majority of third parties agree that Trayport was not used strategically against GFI's rivals.[74] In light of this, we are of the view that the conditions of competition under the counterfactual described above would not be materially different from the pre-Merger conditions of competition.

6.34 Finally, we concluded that it was not sufficiently certain that the New Agreement, in its current form, would have been entered into absent the Merger, and therefore we did not include the New Agreement as part of the counterfactual.

7. Pre-Merger competition

Introduction

7.1 As we describe in Section 3 above, the Parties largely provide different services within the European utilities trading markets: ICE provides exchange venues 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 Our theories of harm principally focus on the potential vertical effects of the Merger. We considered whether ICE through its ownership of Trayport may adversely affect competition between ICE and its rival venues and clearinghouses. In order to carry out this assessment, we have gathered evidence on the pre-Merger status of:

(a) competition between ICE and its rivals; and

(b) the role of Trayport.

7.3 Understanding the nature and level of competition between ICE and its rivals is important for our assessment of vertical theories of harm because, as set out in Section 5 above, it is the downstream markets in the supply of trade execution services and trade clearing services to energy traders, which would be adversely affected by a successful foreclosure strategy. If ICE

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[74] For example, see ICAP hearing summary, paragraph 32, Engie hearing summary, paragraph 20, and RWEST hearing summary, paragraph 32. Only Tradition raised concerns of a lack of neutrality under GFI ownership and it provided one example but noted it had no impact on the market (see Tradition hearing summary, paragraph 31).

competes closely with those of its rivals that use Trayport's software it makes it more likely that the merged firm will have an incentive to foreclose ICE's rivals and adversely affect competition.

7.4 In assessing the role of Trayport, we consider whether ICE's rivals are dependent on Trayport's services in order to compete effectively. We also assessed the significance of Trayport in promoting and enabling dynamic competition between venues. If Trayport is a critical input into the activities of ICE's rivals, for which there are no or only weak alternatives, and if it plays an important role in shaping competition it makes it more likely that the merged entity will have the ability to foreclose ICE's rivals and adversely affect competition.

7.5 To inform our assessment, we considered evidence from traders, brokers, exchanges and clearinghouses, and other ISVs; examined internal documents from the Parties; and examined volume shares of the main exchanges and clearinghouses active in execution and clearing in each asset class and the evolution of these shares and volumes over time.[75]

Competition between ICE and its rivals

7.6 First, we assessed what factors are relevant to traders' choices when executing and clearing trades.

7.7 Second, we gathered evidence on competition in European utilities asset classes by examining:

(a) competition between ICE and its rival exchanges;

(b) competition between ICE and its rival clearinghouses; and

(c) competition between ICE and rival brokers.[76]

7.8 In examining competition between ICE and its rivals, we considered the closeness of competition between different types of venues and different ways in which venues compete. We also considered the extent of current head-to-head competition for individual trades; potential head-to-head competition represented by the threat of entry from a rival into an asset

[75] Full details of our evidence gathering is set out in Appendix A on the 'Conduct of the inquiry'. Appendix D sets out in full 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. Appendix E sets out an overview of European utilities trading.
[76] 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.

class/product where an incumbent venue has a strong position; and dynamic competition represented by the launch of new products and/or markets, and innovative trading solutions.

7.9 In assessing the nature of competition between venues, we have also taken into account the importance of liquidity in both execution and clearing. 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 on to its exchange, and also to win business clearing OTC trades of that product. Our view is therefore that while the framework set out in paragraph 7.7 above provides a useful structure for our assessment of competition between ICE and its rivals, ultimately we consider how the Merger may impact competition in the round.

Traders' choices when executing and clearing trades

7.10 The evidence we considered from the Parties and third parties regarding the factors affecting traders' choices of trading venue was broadly consistent. This showed 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 also offered traders 'market maker' agreements under which traders are incentivised to commit to supply a certain level of liquidity to a venue which is then intended to attract further liquidity to that venue.

7.11 The main and third parties told us that the extent to which traders might choose between an exchange and a broker for an executed trade depend 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.

7.12 For clearing, there was a consistent view from all parties that margin[77] and open interest were the key drivers for traders' decisions about where to clear. The ability to cross-margin (or net) 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

[77] 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.

and result in offsetting risk make the trader eligible for margin reductions. The level of clearing fees was a secondary factor but competitors sought to attract clearing by lowering fees.

7.13 The evidence we gathered on the importance of the ease of processing and the importance of an STP link was more mixed. For example, Trayport told us that we should not exaggerate 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, Trayport said it was possible to send trades for clearing without relying on Trayport and traders were aware of the alternatives. However, a number of brokers, traders and clearinghouses emphasised the importance of the STP link in quickening and securing the clearing process.[78] Further, internal documents suggested the quality of Trayport's STP link was a factor in a rival clearinghouse increasing its volumes in cleared coal trades.

7.14 Our view is that the importance of the STP link is secondary to margin offsetting and clearing fees but its availability and contribution to the ease of clearing can be a factor in winning OTC cleared volumes from incumbent clearinghouses.

7.15 Detailed evidence on the factors influencing traders' choice of venue and clearinghouse is set out in Appendix I. We consider the influence that Trayport has on these factors in the 'Role of Trayport' section below.

Competition between ICE and rival exchanges

7.16 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 position relative to its rivals.

Head-to-head competition

7.17 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 simultaneously. In such circumstances, traders will have a choice of execution venue.

[78] See Appendix I, paragraphs 20 & 21.

7.18 We observed that ICE has a particularly strong position in the following European utilities asset classes across a number of products (see Appendix E):

(a) In 2015, ICE accounted for [90–100]% of exchange-based trades in European gas. The only other exchange holding any significant liquidity was Pegas with [5–10]%. Pegas competes head-to-head with ICE and represents its closest competitor in this asset class.

(b) In the secondary emissions market, ICE accounted for around [90-100]% of exchange traded volumes in Europe, in 2015, and competed with EEX and Nasdaq which both held some liquidity in this asset class.

7.19 In 2015, ICE also held [0–5]% of on-exchange European power execution volumes and competed directly with EEX and Nasdaq which were the strong incumbents with shares of [50–60]% and [30–40]%, respectively.

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

Potential head-to-head competition

7.21 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,*[79] 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.[80] 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.

7.22 We also note that this threat of liquidity shifting was recognised as an important and active competitive constraint by the European Commission in *Deutsche Börse/NYSE Euronext*.[81] The European Commission identified a substantial degree of potential competition between the parties based on two

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[79] Competition Commission, A report on the proposed acquisition of London Stock Exchange plc by Deutsche Börse AG or Euronext NV, 1 November 2005.
[80] Deutsche Börse AG/Euronext NV/London Stock Exchange, 1 November 2005, paragraph 4.57.
[81] European Commission decision, Case No COMP/.6166 – Deutsche Börse / NYSE Euronext, in particular paragraphs 518, 551 & 555.

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;[82] 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 for any new products they may seek to launch, which meant that they were particularly effective potential challengers for each other's key products.[83]

7.23 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 utilities asset classes, and their ability to leverage this to offer attractive cross-margining and offset opportunities to traders of any new products they may seek to launch.

7.24 We observed that a number of exchanges active in European utilities asset classes have existing volumes in several asset classes (primarily ICE, Nasdaq and EEX see Appendix E). Exchange based trades are automatically routed for clearing and the degree of correlation between the products offered by an exchange with a connected clearinghouse allows traders to offset margin costs across products. These existing volumes would 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 connected to exchanges 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 exchanges and their clearinghouses. This is presented in Figure 5 and 6 below for ICE and [✂].

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[82] In Deutsche Börse/NYSE Euronext, the European 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* (European Commission decision, Case No COMP/M.6873, 24 June 2013), the European 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.

[83] In Deutsche Börse/NYSE Euronext the European 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 European 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).

Figure 5: ICE margin offsets

[✂]

Source: ICE.

Figure 6: [✂] margin offsets

[✂]

Source: [✂]

7.25 The percentages in each cell indicate the amount of margin offset between products and asset classes in rows and columns, which is available as a result of underlying correlation. For example, Figure 6 shows that [✂]can be offset between [✂]% and [✂]% with contracts in [✂]. [✂] contracts have a similar degree of offset with products in other asset classes: [✂] to [✂]% with emissions and [✂] to [✂]% 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 [✂], if the trader has an opposite position(s).

7.26 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.

7.27 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 expand and win liquidity across European utilities asset classes:

'[✂]'

7.28 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, [✂].

7.29 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.[84]

7.30 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:

'[✂]'

7.31 Based on this evidence of exchanges actively seeking to challenge and take liquidity from one another, we concluded that this demonstrates that ICE and its rival 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

7.32 We considered the extent to which markets evolve and ICE and its exchange rivals develop strategies to 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. We also considered the extent to which competition is occurring now for nascent markets and/or OTC markets which are currently voice brokered and which may transition to exchange-based trading in the future.

7.33 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.

7.34 However, the Parties further submitted, in response to our provisional findings, that exchange contracts were almost always OTC look-a-like contracts with no innovation and no first-mover advantage. Therefore, they argued, whilst first-mover advantage was important in the OTC space, it was less so for exchanges.[85]

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[84] Based on the main parties' volume data.
[85] ICE/Trayport response to provisional findings, slide 32.

7.35 Some of the Parties' internal documents 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: '[✂]'. We also noted the evidence from Trayport's documents, presented in Figure 11 and discussed in paragraphs 7.177 to 7.179 further below, about Trayport considering expanding its covering into new products such as oil, as well as new geographies.

7.36 Third parties suggested first-mover advantages were relevant to exchanges. EEX said 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.[86] Further, another exchange told us that:

> Where these network effects are sufficiently strong or one of the competing firms can get an edge over its competitor – for example, through a first mover advantage, on-boarding of market makers or liquidity providers, or more reliable pricing information – it is not uncommon for firms who were actively competing against each other for the market, to be unable to sustain the investment costs required to gain volumes.[87]

We also noted that Nasdaq had been the first exchange to enter the Nordic Power market and still retained a very strong position in that market, contrasting with its smaller shares in other European markets.[88]

7.37 We are therefore of the view that innovation and first-mover advantage is an important aspect of competition between exchanges. As OTC markets become more liquid the products concerned become more suitable for exchange-based trading. Accordingly, exchanges develop vanilla or copycat products and compete to become the first exchange on which liquidity gathers, including by offering fee holidays, discounts and rebates. Given the importance of network effects and the stickiness of liquidity once it has gathered on a venue, the time to market and first-mover advantage is an important competitive factor.

7.38 In our view, an example of dynamic competition is the introduction of a non-multilateral trading facility (non-MTF) by EEX. It is intended to maintain the level playing field for exchanges for those physical products where brokers

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[86] EEX Group hearing summary, paragraph 8.
[87] Further submission from Exchange C, 27 June 2016, p8.
[88] Nasdaq hearing summary, p3.

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, or prefer to keep exchange trading volumes short of regulatory thresholds, and that, innovation is therefore required to compete with OTC venues. Although, the value and eventual popularity of these 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 and these venues seek to open up new flanks of competition.

7.39 We considered the Parties' submission in response to our Provisional Findings that this is not a new venue type and, therefore, there is no basis to say that venues were competing with one another to gain first-mover advantage.[89] However, EEX's non-MTF venue remains an example of an exchange venue seeking to imitate a venue type that had previously only been available OTC, in order to win liquidity, and it was the first exchange to do so. To this extent, in our view, this was an innovation and a relevant example of dynamic competition.

7.40 The evidence we have gathered indicates that the introduction of new products and venue types, and time to market, are important dimensions of competition between exchanges. This is particularly true because once liquidity has gathered on a particular venue that liquidity becomes increasingly difficult to shift as a result of network effects. Therefore, we concluded that there is dynamic competition between exchanges and they 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. The launch of EEX's non-MTF venue also provides an example of exchanges seeking to innovate in order to transition traditionally OTC markets to on-exchange and thereby create competition for future markets.

Conclusions on competition between ICE and rival exchanges

7.41 In our assessment of the extent of competition between ICE and other rival exchanges in European utilities trading, 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.

7.42 ICE hosts substantial liquidity in the exchange-based execution of European gas and emissions, and in these asset classes it is by far the leading

[89] ICE/Trayport response to Provisional Findings, 5 September 2016, slide 32.

exchange with a share of over 90% in both cases. For European gas, the only other exchange with significant liquidity is Pegas and it closely competes head-to-head with ICE for liquidity. For European emissions ICE competes head-to-head with EEX and Nasdaq. Whilst ICE is a less significant player in European power, with [0–5]% of liquidity, it also competes head-to-head with EEX and Nasdaq in this asset class across a number of products. For these asset classes, we found that there was direct head-to-head competition between ICE and its rivals.

7.43 We are of the 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. ICE's and third party rivals' internal documents also demonstrate a broad intention to compete with each other across all European utilities asset classes.

7.44 Finally, we 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.

7.45 Overall, we found that ICE is the leading exchange provider in both European gas and emissions trading, and it competes closely with other rival exchanges head-to-head. ICE and its rivals also pose a substantial competitive constraint on one another through the threat of potential head-to-head competition, as indicated by the close correlation between products across European utilities asset classes, and there is also dynamic competition between ICE and its rival exchanges.

Competition between ICE and rival clearinghouses

7.46 We next considered the extent to which ICE and its rival clearinghouses compete with one another to clear trades that are executed OTC in the European utilities space. We only considered competition between clearinghouses for OTC trades, which are routed for clearing, because trades that are conducted wholly on-exchange are fully automated and do not require any involvement from a broker, ie these trades are automatically routed for clearing at the relevant exchange's clearinghouse.

Head-to-head competition

7.47 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 (a Dutch gas product), where ICE has a very strong position and EEX (through its clearinghouse ECC) and CME also compete.

7.48 A switch in exchange also requires a switch in clearinghouse. As discussed above, where exchanges and clearinghouses both have an open interest in a specific asset class and offer an equivalent product, these directly compete with each other.

7.49 ICE is active in clearing OTC traded European gas ([90–100]% of OTC trades sent for clearing) and emissions ([90–100]% of OTC trades sent for clearing).[90] In these asset classes it competes head-to-head with EEX and CME.

7.50 In the coal asset class, [90–100]% of OTC trades were sent for clearing making it a particularly lucrative asset class for OTC clearing. In 2011, ICE held [90–100]% of these volumes but as of 2015 this fell to [40–50]%. CME now holds the remainder of OTC cleared volumes in this asset class.

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

Potential head-to-head competition

7.52 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.

7.53 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

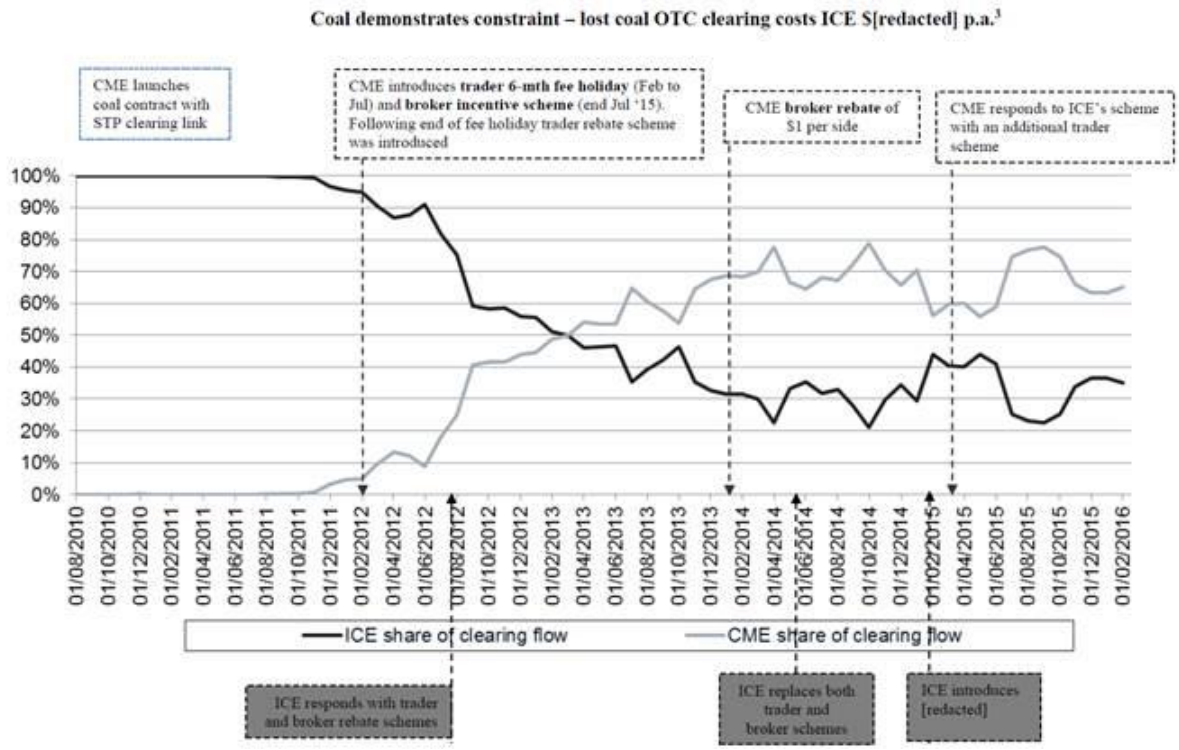
[90] Based on Parties' data for 2015.

products where they have no existing volumes (see Appendix E and paragraphs 7.24 to 7.26 above).

7.54 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 two years increased its share from nothing to around 70%, which it has broadly maintained since. We note 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.

7.55 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.

7.56 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.[91] The Parties told us that ICE responded to this competition by offering trader and broker rebate schemes and [✂].

[91] ICE/Trayport initial submission, p15.

7.57 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.

7.58 We consider that these are clear examples that clearinghouses can and do successfully enter into new product categories and successfully challenge incumbent providers, and that alternative exchanges compete with ICE through the threat of potential head-to-head competition.

Dynamic competition

7.59 We also considered evidence on the extent to which competition was reflected in strategies of the relevant clearinghouses to launch new products or innovative trading solutions actively seeking to beat the competition and/or create new OTC cleared markets.

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

7.61 As for exchange competition, we concluded that ICE and its rival clearinghouses compete dynamically to introduce new products and to encourage OTC transactions to be sent for clearing, thereby creating new flanks of competition.

Conclusion on competition between clearinghouses for OTC trades

7.62 We 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 EEX and CME.

7.63 We 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 the leading exchange in clearing OTC traded gas ([90–100]% of OTC trades sent for clearing), emissions ([90–100]% of OTC trades sent for clearing)[92] and oil, and faces potential competition from rival clearinghouses to win this business and competes defensively in response.

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

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[92] Based on Parties' data for 2015.

Competition between ICE and rival brokers

7.65 Firstly, we considered competition between ICE 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. Some traders with existing clearinghouse membership or access to sponsorship could switch between bilateral credit and clearing in response to changes in the relative cost of clearing and the credit risk. Others could acquire a clearing ability (through membership or sponsorship) in response to such changes.

7.66 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 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. We have therefore not considered competition in this segment in further detail for the purposes of our assessment by segment. However, in light of the important industry trends towards exchange trading (see paragraph 2.67 above), we do consider that exchanges may target bilateral trades at least to some extent in order to bring these on exchange and, therefore, it is appropriate to include this in our analysis of the Parties' incentives to foreclose, although using a lower diversion rate reflecting the lesser degree of competitive interaction.

7.67 We next considered the extent to which ICE and other exchanges compete with brokers for OTC cleared trades. As set out in Appendix E, there is an OTC presence in all European utilities asset classes where ICE is active with the main brokers being ICAP, BGC/GFI, Tradition, Tullett, Marex and Griffin. In light of this, we focused our assessment 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 (as detailed above). We also considered that any competitive constraint may be asymmetric such that exchanges represent a stronger constraint on brokers than vice versa.

7.68 As discussed in paragraph 5.15 above, ICE submitted that there is competition between brokers and exchanges. This is especially so where

OTC markets are more liquid (see paragraph 7.37). This competition between brokers and exchanges is further confirmed by the Parties' reference in one submission to '[✂]'.

7.69 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.

7.70 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 was likely to shift from OTC to exchanges. We nevertheless 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 most market participants currently trade under the 3% limit and could therefore shift further trading on exchange.[93] Finally, we noted that the constraint did not apply to other asset classes as strongly.

7.71 Appendix C to the final report contains a more detailed assessment of financial regulation.

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

[93] Only two traders exceeded the 3% threshold based on volumes cleared on ICE exchanges. Another five traders commanded a market share of between 2 and 3%. Other significant market participants cleared less and the market was characterised by a long tail of traders with the top ten only commanding a market share of 25.1%. We therefore considered that a significant proportion of the market could be shifted to ICE exchanges without participants falling outside the ancillary services exemption.

7.73 We tested this by comparing the characteristics of exchanges and brokers as execution venues for cleared trades. As set out in paragraph 7.11 and in Appendix I, we found that there are a number of differences between the two types of venue that may to some degree limit switching by traders, which 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.

7.74 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 '[✂]'.

7.75 ICE submitted that these documents could not be relied on as they were old and were produced under a different regulatory regime. At that time the regulatory environment was fast changing and had 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. This meant that the regulatory pull from OTC to exchange did not materialise.

7.76 Our 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 expressed, and as discussed above our view is that recent regulatory changes are important but their impact should not be overstated (see paragraphs 2.62 to 2.68 above and Appendix C).

7.77 Moreover, we noted that some of these documents were relatively recent. For example, a strategy document, dated September 2015, contained the following diagram [✂]. We noted that this document post-dated the announcements in respect of the carve-out for physically settled energy derivatives from MiFID II.

Figure 8: Extract from ICE strategy document dated September 2015

[✂]

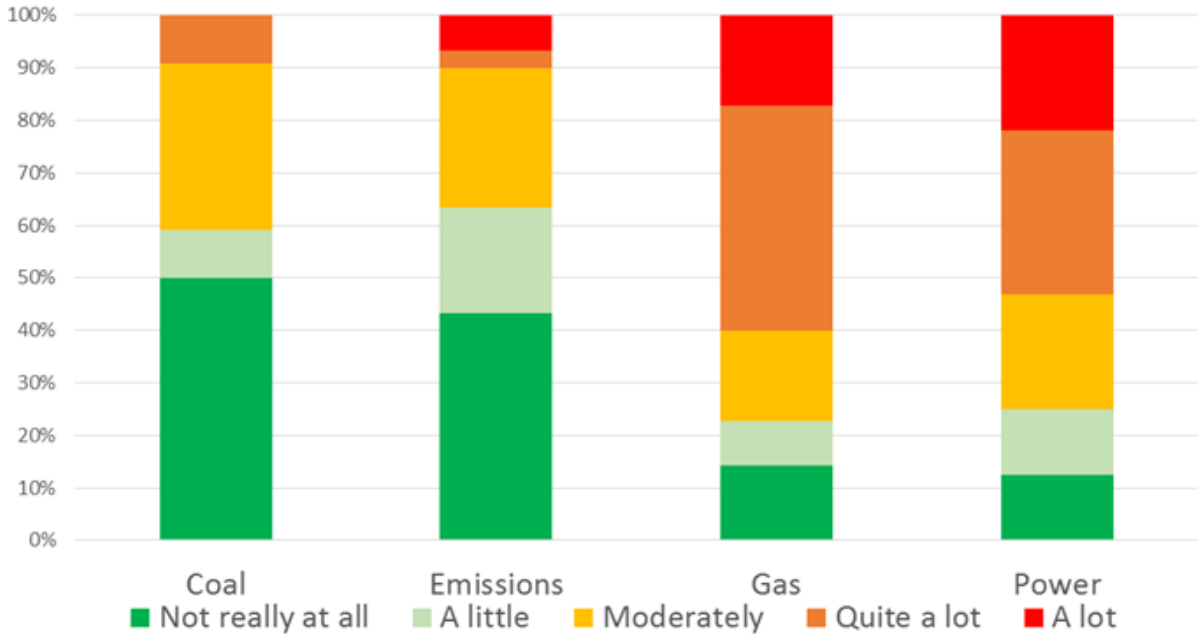
Source: ICE.

7.78 We also noted that the commentary alongside this diagram contains a number of statements relating to OTC trading, including '[✂]'. Our view is

that these documents make clear that ICE does see itself as competing with or potentially competing with brokers for OTC cleared volumes.

7.79 We then sought evidence on the extent to which ICE and brokers compete for cleared trades through a questionnaire to all of the largest trader customers of the Parties. 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.

7.80 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.

7.81 We received 39 responses overall,[94] including responses from most of the Parties' largest trader customers (by trading volume) active in European utilities trading, and we considered that the absolute number of respondents was sufficiently large for the relatively broad conclusions that we were

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

drawing from the questionnaire to be robust. Moreover, our conclusions were broadly in line with evidence we received from the Parties.

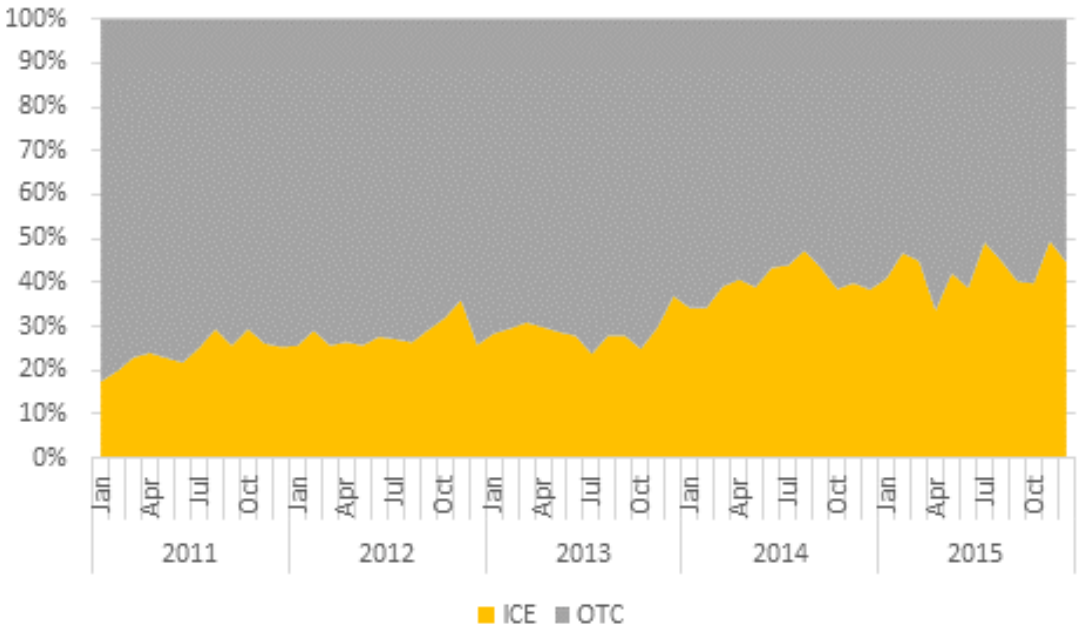
7.82 We also investigated this issue in more detail by using the trader questionnaire to understand traders' switching behaviour. We first asked them how they would have reacted if ICE's prices had been 10% higher. Respondents reported that this would have resulted in a 13% reduction in emissions volumes executed at ICE, of which 12% would have switched to brokers, and a 20% reduction in gas volumes at ICE, of which 67% would have switched to brokers.

7.83 We also asked traders what they would have done if ICE's exchange had not been available and had to execute at another venue. In response to this question responding traders reported that 45% of their emissions and 32% of their gas volumes would have switched to brokers. 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 ICE, and other exchanges, compete with brokers for the execution of cleared trades.[95]

7.84 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 available 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 in the case of Italian power, where EEX increased its share likewise. 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 on exchange and a reduction in the share traded OTC. Where this occurred, the strong incumbent exchange appears to have been well placed to capture additional volumes.

[95] We weighted traders' responses by the volumes traded by each trader in each asset class.

Figure 10: Shares of execution of NBP



Source: CMA analysis.

Conclusion on competition between ICE and rival brokers

7.85 We concluded that the closest competition is likely to be between execution venues of the same type, ie broker-to-broker and exchange-to-exchange. However, we also concluded that 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 ICE and brokers, such as, ICAP, BGC/GFI, Tradition, Tullett, and Griffin.

7.86 As set out in our assessment of competition between ICE and rival exchanges above, ICE is the leading exchange in the execution of both European gas and emissions. It is in these asset classes that we would expect ICE to compete most closely with rival brokers particularly for OTC cleared trades, but also found that ICE would compete with brokers to win OTC bilateral trades over the longer term.

7.87 Finally, 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 concluded that there is likely significant scope for trade volumes to move to exchanges within the regulatory constraints for gas products, and that the exemption would not affect competition between exchanges and brokers for other asset classes.

Conclusion on competition between ICE and its rivals

7.88 Our assessment of the nature of competition and rivalry between venues and clearinghouses in European utilities, indicates that: (i) ICE is the leading exchange in the European gas and emissions asset classes (including in the UK), across a number of products; (ii) it competes head-to-head with rival exchanges, clearinghouses and brokers in these asset classes; and (iii) it competes in the European power asset class where it holds a smaller position. There is also potential head-to-head competition between ICE and its rival exchanges and clearinghouses in asset classes where their products are more closely correlated across all European utilities asset classes. We also found that there is dynamic competition between venues and clearinghouses which takes place through the introduction of new products and innovative trading solutions including seeking to develop competition in future markets.

7.89 This competition between ICE and its rivals delivers a number of benefits to traders which are provided with the aim of influencing traders' choice of venue and clearinghouse. These benefits include: price incentives, such as fee holidays and trader incentive schemes (including market maker agreements and rebates); new products and innovative trading solutions; and for clearing margin offset arrangements to reduce cost and the provision of STP solutions to ease the process of clearing OTC trades.

The role of Trayport

7.90 Having established that ICE is the largest exchange supplying execution and clearing services in certain European utilities asset classes, and that it competes vigorously with its rivals in the downstream supply of execution and clearing services, we examined the role of Trayport as an input into the services provided by ICE's rivals. We structured our assessment under two questions:

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

(b) What role does Trayport play in enabling and promoting dynamic competition?

7.91 Assessing the level of dependency or reliance of market participants on the Trayport platform, including an assessment of any available and effective alternatives, is important in the context of assessing a vertical foreclosure strategy because it indicates the extent to which any available foreclosure mechanisms could adversely affect ICE's rivals. Put simply, if venues are dependent on the Trayport platform to compete effectively with ICE in the

supply of execution and/or clearing services to energy traders then the removal of access to that service or an increase in the price and/or reduction in service quality, including a reduction in development and/or innovation, may significantly affect those dependent rivals' ability to compete with ICE. In assessing dependency, the mere existence of an alternative does not necessarily mean that a market participant is not dependent. It will be important to assess the level of dependence in the context of market power and usage, and the effectiveness or closeness of any alternatives.

7.92 For the second question set out in paragraph 7.90 above, we assessed whether Trayport's position in the market was different from other ISVs in terms of the extent to which it could enable and promote dynamic competition between trading venues and between clearinghouses, and how it might do so.

7.93 We set out below the Parties' views on the role of Trayport in European utilities trading and evidence from their internal documents. We take into account the views of third parties on the role of Trayport as part of our assessment of the dependence of traders, brokers, exchanges and clearinghouses on Trayport's services (see paragraphs 7.117 to 7.170 below).

The Parties' views

7.94 The Parties told us that Trayport was an ISV which provides software and connectivity for market participants.[96] Its core products are described in more detail in Section 3.

7.95 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.[97]

7.96 As a result of the initiation and development of its products, the Parties noted that Trayport had 'established an important network of customer

[96] ICE/Trayport initial submission, paragraph 2.5.
[97] ICE/Trayport initial submission, paragraph 2.7.

relationships and connectivity with market participants active in European utilities markets'.[98]

7.97 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. 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.

7.98 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 timeframe (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. 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 which can put these components together or build new components.

7.99 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 RWEST and E.ON had 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.

7.100 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 had an incumbent position as supplier of software to traders, brokers and exchanges. This was more likely to require the support of market participants, but if participants were motivated to switch away from using Trayport's software to an alternative solution, they were more than capable of doing so within a relatively short space of time.

7.101 The Parties said that the relevant exchange groups were not dependent on Trayport software.[99] They noted that EEX, CME and Nasdaq used Trayport connectivity via the GV Portal and/or its Clearing Link. None of these three

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[98] ICE/Trayport initial submission, paragraph 2.8.
[99] ICE/Trayport initial submission, paragraphs 7.1–7.3.

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. Pegas did use ETS but, as part of the EEX Group, the Parties argued it could switch to using EEX technology at any point during its ETS licence.

7.102 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 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[ing] the Trayport network/Trading Gateway.'[100]

7.103 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 had available (such as GFI's Energy Match and ICAP's Fusion proprietary technology) could be used should BTS become unfit for purpose.[101] The concentration of trading on certain instruments meant that the benefits of price aggregation were weakened. For example, they said that in coal, given GFI was the largest coal broker, it was plausible that traders would switch to GFI's proprietary technology should BTS be withdrawn.

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

7.105 The Parties said that brokers had alternatives to Trayport's Clearing Link. They noted that direct STP 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.[102]

7.106 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.[103] The Parties highlighted what they saw as the risks to this

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[100] ICE/Trayport initial submission, paragraph 8.3.
[101] ICE/Trayport initial submission, paragraph 10.4.
[102] ICE/Trayport initial submission, paragraph 9.7. [✂].
[103] ICE/Trayport initial submission, paragraphs 3.2–3.5.

business model of favouring particular venues over others or seeking to influence competition to the benefits of particular venues or types of venue.[104]

Evidence from Parties' internal documents

7.107 We found that the Parties' internal documents indicated that Trayport was very important for European utilities trading. For example, ICE noted in a strategy document, under a heading '[✂]', that Trayport '[✂]'. It went on to say that Trayport made '[✂]' and involved a '[✂]'.

7.108 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 as a result of its front-end screen having significant penetration amongst traders (see Table 4 below). For example, ICE did not use Trayport's ETS or GV Portal and it provided access only to a limited number of its energy products through Trayport's ICE Link. This suggests that any venues which are dependent 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.

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

7.110 Further, a Trayport presentation to ICE management post-Merger [✂] We note that this internal evidence is consistent with evidence from brokers, as set out below, that they found it impossible to avoid using Trayport once a critical mass of their rivals used it. We consider below further evidence on the role of Trayport in enabling and promoting competition in new asset classes.

7.111 Finally, one document dated November 2011, discusses Trayport's position with respect to ICE, and how Trayport sought to put commercial pressure on ICE in the way it offered ICE products. The document lists three main options for Trayport to challenge ICE. [✂]:

'[✂]'

[104] ICE/Trayport initial submission, paragraph 2.10.

(a) [✂].

(b) [✂].

(c) [✂].

(d) [✂].

(e) [✂].

(f) [✂].

Our assessment

7.112 These internal documents indicated that the Trayport platform was an important input for ICE's rivals across European utilities asset classes, and particularly for growing volumes in new asset classes. This was a result of the integrated nature of the Trayport platform which results in significant network effects.

7.113 Pre-Merger ICE limited the extent to which it licensed Trayport's software. For example, ICE did not license Trayport's ETS, GV Portal or Clearing Link products but rather it primarily relied on its own front-end screen, WebICE, in order to achieve price distribution amongst traders.[105] The evidence in these internal documents indicated that the Parties' had long-term strategies through which they sought to channel trading volumes through their respective technology platforms, and that they challenged each other in this respect.

7.114 Below we have considered further evidence in order to determine if ICE's rivals are dependent on Trayport in order to compete effectively with ICE and the extent to which Trayport has engaged in active strategies to enable and promote competition between ICE and its rivals.

Are ICE's rivals dependent on Trayport?

7.115 As result of the integrated nature of the Trayport platform and the network effects associated with it, we first considered traders' dependence on the Trayport platform to view prices and execute and clear trades. If traders are dependent on the Trayport platform this in turn increases the likelihood that

[105] At the request of some trader customers, Trayport had historically developed a single software component, ICE Link, to connect Trading Gateway to certain ICE exchanges for price listing purposes.

venues will be dependent on the Trayport platform to access these traders and generate liquidity on their venues.

7.116 We then assessed the extent to which ICE's rival exchanges, brokers and clearinghouses are dependent on the Trayport platform to disseminate their prices and offerings to traders. In doing so, we set out third party submissions, volume data on usage and evidence gathered through our market questionnaires. We have also considered carefully the Parties' arguments on this evidence and kept in mind the information set out above from their internal documents pre-Merger which discuss the relative importance of Trayport.

- *Traders' dependence on the Trayport platform*

7.117 Traders were consistent in citing aggregation and access to multiple venues as the key strength of the Trayport platform. 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.[106]

7.118 RWEST told us that Trayport had 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 meant that any market participant needed to purchase the Joule/Trading Gateway to trade energy in Europe and any broker or exchange had to be available via Trayport. It stated that the barriers to entering on either side of this 'monopolistic nexus' were extremely high. It said that in some markets there were other front-end screen choices, for example, in oil RWEST said that it could use X-Trader, TT or Exxeta. However, RWEST emphasised that these front-ends still needed to use Trayport's Trading Gateway to access the UK power market.[107] More detailed information on traders' views on Trayport is set out in Appendix D.

[106] Engie hearing summary, paragraph 11.
[107] RWEST hearing summary, paragraph 3.

7.119 We tested these third party trader submissions by calculating the penetration of Trayport's front-end screen. Responses to our trader questionnaire, summarised in Table 4 below, showed that a large proportion of traders have a Trading Gateway screen.

Table 4: 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.

7.120 Table 4 above also shows that the only other screen with significant presence on traders' desks is the ICE screen (WebICE).

7.121 Responses to our trader questionnaire also showed that traders would not generally switch away from Trayport to an alternative front-end screen. We asked them how they would have reacted if Trayport's licence fee had been 10% higher. Respondents reported that this would have resulted in a 2% reduction in Trading Gateway purchases, of which around 60% would have switched to other Trayport dependent screens for trades executed in coal and approximately a third in gas. We interpreted the trader questionnaire as providing further evidence that traders are dependent on Trayport for price discovery and execution of trades.[108]

7.122 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

[108] We weighted traders' responses by the volumes traded by each trader in each asset class.

would be a big challenge to persuade each of its major counterparties to shift to a new system all at the same time.[109]

(b) RWEST 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.[110] 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.

7.123 Third parties frequently cited Griffin as an example of a past attempt by a competitor to establish a competing platform to Trayport. Griffin, using ICE software, attempted to establish a rival to the Trayport platform in 2011 and its entry failed (see paragraphs 75 to 80 of Appendix D for further information). Many third parties agreed that Griffin's failure to migrate liquidity away from the Trayport 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 Section 9 and in Appendix D.

7.124 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. We have set out the evidence we gathered on market entry and expansion in Section 9, and more detailed evidence on Project Trafalgar in paragraphs 81 to 84 of Appendix D.

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[109] Griffin hearing summary, paragraph 8.
[110] We note the Parties' submission that RWEST is conflating the decision to move away from Trayport with a decision to switch central counterparty clearinghouse. It was submitted that whilst there would be duplicated costs associated with any switch of technology there is no requirement to wind down any existing trades or open interests which are all placed elsewhere.

7.125 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 did not prove that traders were dependent on Trayport.

7.126 We concluded that third party evidence, and the analysis of volume data and the traders' questionnaire, indicated 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 (see Table 4 above) 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 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 also concluded that for an alternative front-end access provider to offer traders a level of aggregation comparable to Trayport's, would require a high proportion of brokers (if not all) to migrate to a new back-end system together with traders switching at the front-end. This would require collaboration, a market-wide shift and entail significant risks for all stakeholders.

- *Brokers' dependence on Trayport*

7.127 All the main brokers said they were dependent on Trayport. For example, ICAP said that the closed nature of the Trayport API 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 could do in the majority of other markets.[111]

7.128 However, 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 did use Trayport for new products or asset class launches, it was typically where Trayport already had some traction and connectivity and to use a system other than Trayport would require overcoming the barriers to entry that existed (see Section 9). For example, this was the case in the Wet Forward

[111] ICAP hearing summary, paragraph 15.

Freight Agreement market. In assessing this evidence, and by way of clarification, we inferred that ICAP remained dependent on Trayport to launch new products in European utilities asset classes where Trayport already holds a strong position.

7.129 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 (traders) that were connected to Trayport. The Trayport system also provided Broker A with a reference point for its own internal voice-brokers.[112]

7.130 As set out above, Griffin attempted to establish a rival to the Trayport platform in 2011 and its entry failed (see paragraphs 75 to 80 of Appendix D for further information). 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.[113]

7.131 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.

7.132 More detail on brokers' views on the importance of Trayport is set out in Appendix D. Overall, the submissions we received from brokers indicated that they were dependent on Trayport to access traders and compete in European utilities asset classes. We sought to test these submissions by examining brokers' usage of the Trayport platform.

7.133 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

[112] Broker A hearing summary, paragraph 4.
[113] Griffin hearing summary, paragraph 5.

these ISVs did not represent independent alternatives that were used instead of Trading Gateway.

Table 5: 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.

7.134 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.

7.135 The data in Table 4 was provided by the Parties and it was unclear what percentage of trades were carried out by voice only. These figures were based on high level assumptions made by the Parties. We therefore investigated the role of voice trading in more detail. Traders told us that a number of trades in the European utilities markets may involve some interaction by voice, but also that most of these also involved some hybrid use of Trayport too, for example to review prices on screen, and to execute and/or capture trades by keying them electronically into Trayport. Brokers told us that the use of voice brokerage would be a weak alternative to Trayport because it is not scalable or efficient for high volume markets. 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 the effectiveness of voice as a standalone alternative to Trayport, and our view is that it is not a strong alternative to electronic trading.

7.136 Additionally, we considered whether brokers could switch away from Trayport's BTS to an alternative back-end solution. We concluded that alternative back-ends were ineffective because they could not communicate with the Trayport front-end, as a result of Trayport's Closed API, and therefore if brokers choose to shift away they would no longer have access to the liquidity of the large network of traders using the Trayport front-end.

7.137 On the basis of the evidence set out above, we concluded that brokers were dependent on Trayport and that there were no effective alternatives.

7.138 Taking into account our assessment of competition between ICE and rival brokers (see paragraphs 7.85 to 7.87), we would expect that any reduction in competition between ICE and its rival brokers, as a result of a successful foreclosure strategy, would have an impact in those asset classes where ICE competes head-to-head with rival brokers, and result in a loss of potential head-to-head competition. We found that such a strategy would have the greatest potential impact on OTC cleared trades, which could more easily shift on-exchange, but could also result in ICE shifting bilateral OTC trades to on-exchange over the longer term. We consider below the role of Trayport in enabling and promoting dynamic competition between ICE and its rivals, and whether a foreclosure strategy could result in a loss of competition for new or evolving markets.

- *Exchanges' dependence on Trayport*

7.139 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 was in having access to the entire lifecycle of a trade in one place. If there was no price discovery, there would likely be no trade agreement and trade submission, including for clearing to CME.[114] Similarly, an exchange told us that Trayport had a virtual monopoly on the OTC markets in power and gas trading as this was the trading system used by all major brokers. Furthermore, it told us that all trading members active in power and gas trading had to connect to Trayport to access best execution prices.

7.140 Nasdaq also told us that it considered Trayport essential to compete in the European utilities markets as a very high number of the trades went through the Trayport platform. However, it noted that it used Trayport less than some other exchanges. This was because Nasdaq had many traders also using other systems due to its history where it mainly focused on Nordic power in which it had been active for many years.[115] We note that ICE recently launched new German and Nordic power contracts, [✂].

7.141 Some exchanges told us that Trayport played an important role in helping them to launch new products by providing aggregated access to traders through the Trayport platform. For example, Pegas considered Trayport's input as key to the early success of its TTF product.[116] [✂] 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

[114] CME Group hearing summary, paragraph 23.
[115] Nasdaq hearing summary, paragraph 9.
[116] Powernext hearing summary, paragraph 25.

[✂] volumes began to increase in [✂] at the expense of ICE. [✂] also told us that where attempts had 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.

7.142 Overall, in response to our market inquiries, exchanges submitted that they were dependent on the Trayport platform to compete in European utilities asset classes. As for brokers, we sought to test this by examining volume usage data.

7.143 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 paragraphs 7.41 to 7.45 and 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 6 below.

Table 6: [✂] use of Trayport

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

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

7.144 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]% [✂] 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.

7.145 We have also examined volume data for [✂] and its use of Trayport. The results of our analysis of [✂] volume data is presented in Table 7 below.

Table 7: [✂] use of Trayport

%

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

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

7.146 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.

7.147 The evidence shows that exchanges which currently use their own matching engine depend on Trayport for the dissemination of their prices to traders in particular asset classes. We noted that, for example, more than half of [✂] trading in power and of [✂] trading in German power is currently initiated on Joule/Trading Gateway. Further, and as set out in Table 4 above, responses to our trader questionnaires show that a large proportion of traders have a Joule/Trading Gateway screen compared with rivals' direct screens which are only used by a small proportion of traders. In our view, this is relevant in assessing the extent to which ICE's rivals are dependent 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.

7.148 An important consideration in the question of whether this pre-existing level of trade volumes flowing through the Trayport software amounts to dependency is the relative ease with which customers can switch to alternatives. For example, high levels of use of Trayport would not on its own show dependency: if exchanges were choosing to use Trayport but were able to switch away easily to an effective alternative they would not be dependent. Therefore, we assessed the ability of exchanges to switch away from the Trayport platform by using their own direct front-end screens or listing their products and prices on an alternative front-end. The Parties submitted that usage rates were not themselves determinative of dependency.[117]

7.149 We found that existing alternatives to Trayport's front and back-ends are weak because the Trayport platform offers uniquely integrated access to traders' and venues' liquidity resulting in significant network effects.

[117] ICE/Trayport response to Provisional Findings, 5 September 2016, slide 20.

Therefore, in order for a rival to be an effective competitor it would need to offer equivalent integrated access for traders, venues and clearinghouses, and in doing so would need to engineer a coordinated shift in liquidity away from the Trayport platform. Existing alternative front-end screens either have to sit on top of the Trading Gateway in order to provide an aggregated view of venues' liquidity, ie are Trayport dependent and as such are not real alternatives for venues, or (with the exception of WebICE) exchanges' own direct front-end screens (eg CME direct) have limited penetration amongst traders. Therefore by choosing not to use Trayport's ETS back-end or connecting its own matching engine via GV Portal, an exchange would no longer have access to the high volume of traders who use the Trayport front-end. In short, we found that alternative back-ends to ETS or accessing via Trayport's GV Portal were ineffective because they could not communicate with the Trayport front-end, as a result of the Closed API, and therefore any alternatives did not offer access to Trayport's aggregated pools of liquidity. We set out in more detail in Section 9 and in Appendix D, our views on barriers to entry and expansion.

7.150 In further considering exchanges' ability to switch to alternative solutions, we examined 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 not persuaded that this example is comparable to the situation that Pegas, for example, would be in post-Merger if it were to switch away from ETS. This is because: (i) ICE is less reliant on Trading Gateway for price distribution as a result of the more limited number of ICE's products that are listed on Trayport through ICE Link, 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 Pegas' 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.

7.151 In conclusion, our analysis of exchanges' execution volumes has found that they have alternative routes to traders aside from Trayport, and that, as a result, their dependence on it varies by asset class. However, beyond specific cases where they have historically held substantial liquidity, we found that exchanges are dependent on Trayport to reach traders and generate liquidity in competition with ICE.

7.152 To the extent a successful foreclosure strategy could be successfully implemented, we would expect it to adversely affect competition between ICE and its rival exchanges in those asset classes where they compete head-to-head and also result in a loss of potential head-to-head competition across European utilities asset classes (see paragraphs 7.16 to 7.45 above

and Appendix E). We also considered it could adversely affect innovation and dynamic competition between ICE and other exchanges. We considered further below the role of Trayport in enabling and promoting dynamic competition between ICE and its rivals.

- *Clearinghouses' dependence on Trayport*

7.153 Third parties also provided evidence on 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.

7.154 Of the exchanges with a vertically integrated clearinghouse, 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.[118]

7.155 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 its' agreement was [✂]. CME Group said that normally it [✂].

7.156 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.[119]

7.157 In addition, 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.[120] CME said that even if trades are not submitted through the Trayport Clearing Link, almost 100% of the OTC

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[118] EEX hearing summary, paragraph 20.
[119] CME Group hearing summary, paragraph 7.
[120] 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.

trades for European utilities products cleared by CME Group are trades where price discovery and trade agreement occur on Trayport.[121]

7.158 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 and the risk of human error which was considerably higher.

7.159 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.[122] Similarly, Broker A stated that EFETnet provided a platform with similar functionality to the hosted Clearing Link provided by Trayport, although there may be differences in features such as the range of clearinghouses that each had access to. 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.[123] 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.[124]

7.160 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.[125] 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.[126]

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[121] CME Group hearing summary, paragraph 28.
[122] Griffin hearing summary, paragraph 25.
[123] Broker A hearing summary, paragraph 9.
[124] Tradition hearing summary, paragraph 8.
[125] CME hearing summary, paragraph 23.
[126] Nasdaq hearing summary, paragraph 27.

7.161 As for traders, brokers and exchanges, 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.

7.162 In relation to [✂] we found both were reliant on Trayport for significant amounts of trading volumes:[127]

(a) [✂]:

Across all products [80–90]% of STP volumes for [✂] as a whole were through Trayport's Clearing Link.[128]

In particular, we noted that in power [✂], Trayport's STP Link accounted for the majority of [✂] STP clearing volumes, namely [70–80]% per cent and [80–90]% per cent of German power and Italian power, respectively.[129] 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: [50–60]% of OTC futures volumes cleared in [✂] came through Trayport's Clearing Link.[130] The other trades were sent to the clearinghouse via an alternative front-end ([20–30]%) and manual registration ([20–30]%). CME said that even if trades are not submitted through the 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.[131]

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

7.164 We noted that third parties cited a number of alternative solutions to Trayport's Clearing Link 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 Trayport platform's inter-functionality which allows for the

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[127] [✂].
[128] The remaining volumes are through eXRP STP Link. Manual registration accounts for a minimal amount of volumes: less than 2 [0–5]% across all products and markets.
[129] [✂].
[130] Data provided by [✂] is for 2015.
[131] CME hearing summary, paragraph 28.

routing of trade information to be sent from traders through to brokers and clearinghouses with reciprocal clearing confirmation sent back through the chain using the trade ID.

7.165 We concluded that 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 functionality 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 utilities market. The importance of access to Trayport's Clearing Link, and the Trayport Platform as a whole, is also evidenced by some exchanges' willingness to enter into revenue sharing agreements which we were told was an exceptional payment arrangement with an ISV.

7.166 To the extent a successful foreclosure strategy could be successfully implemented against clearinghouses, we would expect it to adversely affect competition between ICE and its rival clearinghouses where ICE already competes head-to-head for OTC cleared trades, that is, in the European gas, emissions and coal asset classes. Such a strategy could also be used frustrate potential head-to-head competition between ICE and its rival clearinghouses in asset classes where ICE is already strong (ie to defend its position), or in new markets. We have considered below the extent to which a foreclosure strategy could adversely affect dynamic competition between ICE and its rivals.

Conclusion on dependency on Trayport

7.167 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. Venues emphasised that Trayport's technologies were an essential input into trading on the European utilities space. They highlighted the importance of aggregation of multiple venues on one screen and Trayport's Closed API, thereby reinforcing the Trayport platform's network effects and resulting in a lack of viable alternatives for market participants.

7.168 Our assessment of volume usage data is consistent with third party views that the main venues in European utilities trading are dependent on Trayport products. In certain asset classes nearly all electronic trading appears to involve both traders and venues using Trayport products. Brokers appear to be particularly dependent on Trayport as all the main brokers use Trayport for nearly all their electronic transactions, and voice is not an effective alternative for highly liquid markets. 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 historical, long-term presence or to introduce new products, have generally done so through Trayport. This is because ICE's rival exchanges' direct front-end screens only have limited penetration amongst traders.

7.169 As such, we concluded that all of ICE's rival trading venues in the European utilities trading markets are dependent on Trayport to disseminate their prices and offerings to traders in order to generate liquidity. 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, weaker alternatives.

7.170 We concluded that clearinghouses were also dependent on Trayport but to a lesser extent than venues. Along with the improved ease of processing trades for clearing, clearinghouses were dependent on Trayport to achieve distribution of their products amongst brokers and traders.

The role of Trayport in enabling and promoting dynamic competition

7.171 As part of our assessment, we gathered evidence on the extent to which Trayport influences or shapes competition between ICE and its rival venues and between clearinghouses, and in particular its role in enabling and promoting dynamic competition introducing new markets or through market evolution. We considered the Parties' internal documents and past examples of collaborations between Trayport and venues/clearinghouses in order to assess this.

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

'[✂]'

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

'[✂]'

7.174 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: '[✂].'

7.175 The same action plan states:

'[✂]'

7.176 [✂].

Figure 11: Potential Trayport expansion

[✂]

Source: Trayport

7.177 In another action plan from 2011, Trayport discusses its potential role in enabling electronic broker trading in oil. This document notes that Trayport's '[✂]':

(a) [✂].

(b) [✂].

(c) [✂].

(d) [✂].'

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

7.179 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 [✂].

7.180 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 enabling and promoting competition between venues and the mechanisms at its disposal to influence venues' relative competitiveness.

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

(a) [✂].

(b) [✂].

(c) [✂].

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

(a) [✂].

(b) [✂].

(c) [✂].

7.183 We concluded that these internal documents are consistent with third party evidence which shows that Trayport has an important role in enabling and promoting competition between trading venues and between clearinghouses. In particular, these documents show that Trayport's market strength, and the dependence of traders, venues and clearinghouses on it, enables it to influence competition between its customers for execution and clearing services, and potentially stimulate movement of volumes between market participants. In line with our assessment set out in paragraphs 7.112 to 7.114, the evidence demonstrates that the Parties held long-term strategies through which they sought to channel trading volumes through their respective technology platforms, and that they challenged each other in this respect. This was particularly the case for the oil asset class. The evidence also shows that Trayport evaluated and used various strategies to defend and support its customers' businesses and influence competition between them. We assessed 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.

7.184 We also considered the Parties' specific criticisms of our interpretation of these documents[132] and their general 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, were speculative 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, on behalf of its customers, 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.

[132] ICE/Trayport response to Provisional Findings, 5 September 2016, slides 31 – 32.

Conclusions on the role of Trayport in enabling and promoting dynamic competition

7.185 We concluded that Trayport was not a passive software provider but that it was active in its efforts to influence competition between trading venues and between clearinghouses in order to ensure that volumes flow through the Trayport platform. The key factors through which Trayport enables and promotes competition between venues and clearinghouses include:

(a) investing in understanding market dynamics and focussing its resource on those Trayport customers (or prospective customers) which are thought likely to succeed, thereby driving dynamic competition and market structures in favour of the Trayport platform; and, relatedly,

(b) supporting its customers' efforts to shift traditionally voice brokered markets (or asset classes) or nascent markets as they transition through the electronic trading evolution process and become highly liquid. In today's market, its efforts in this regard are particularly relevant to the oil asset class where its efforts to introduce electronic platforms can be viewed as a competitive threat to ICE's strong exchange offering (see Appendix E).

7.186 The internal documents we reviewed clearly indicate that Trayport actively engaged in strategies to promote dynamic competition between its customers and its customers' rivals with a view to creating new markets and/or to shift traditionally voice brokered markets onto electronic trading models. The internal documents also indicated that ICE did not view Trayport as a passive software company but that it pursued strategies intended to challenge the widespread use of the Trayport platform in order to funnel trades through its own integrated technology platform.

7.187 In summary, by supporting and defending its customers' businesses, Trayport builds and protects its own business and, in doing so, promotes and enables dynamic competition between venues and between clearinghouses.

Summary of our assessment on pre-Merger competition

7.188 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 and clearinghouses compete

including execution and clearing fees, and ease of registration of OTC trades.

7.189 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.

7.190 We also found that exchanges and clearinghouses, respectively, 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 innovation and dynamic competition in this industry, and the importance of first-mover advantage driven by the difficulty in shifting liquidity once it has settled in a venue/clearinghouse. We found that venues and clearinghouses were always considering where to enter, or how to create new markets, and how to attract market shares even in asset classes where an incumbent had a strong position.

7.191 We 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.

7.192 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 Pegas, EEX and Nasdaq. We found that in power EEX and Nasdaq are the main exchanges but ICE remains a competitor with more 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.

7.193 Having established that ICE is the leading exchange and clearinghouse in specific European utilities asset classes, and that there is significant competition between ICE and its rivals in the downstream supply of execution and clearing, we next examined the role of Trayport. We considered the extent to which ICE uses the Trayport platform and then considered in detail the dependence of ICE's rivals on the Trayport platform. We then assessed the role of Trayport in enabling and promoting dynamic competition.

7.194 We saw evidence that pre-Merger ICE limited the extent to which it licensed Trayport's software. For example, ICE did not license Trayport's ETS, GV Portal or Clearing Link products but rather it primarily relied on its own front-end screen, WebICE, in order to achieve price distribution amongst traders. At the request of some trader customers, Trayport had historically developed a single software component, ICE Link, to connect Trading Gateway to certain ICE exchanges for price listing purposes. We gathered evidence which indicated that this lack of cooperation was a result of the Parties' long-term strategies through which they sought to channel trading volumes through their respective technology platforms. As summarised in more detail below, we found Trayport was not a passive software supplier but it engaged in active strategies on behalf of its venue and clearinghouse customers, which are ICE's rivals, in order to ensure trading volumes continued to flow through the Trayport platform.

7.195 We found that traders were 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 indicatively found that entry and expansion of alternative front-ends was very difficult and have examined this in more detail in Section 9 below.

7.196 We carefully considered the Parties' arguments on the role of Trayport in European utilities trading, but found that volume data, responses to our questionnaires and third parties' views show that all main venues in European utilities trading are to varying degrees dependent on 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 and voice trading is a weak alternative for these liquid markets. 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 historical, long-term presence have generally done so through

Trayport and, as such, Trayport is a critical route to market in order to compete in asset classes where an exchange has little or no liquidity. Clearinghouses also appear to be less dependent on Trayport for the use of Clearing Link, given the availability of alternatives, although of inferior functionality 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 utilities markets.

7.197 Having established that traders, venues and clearinghouses are dependent on Trayport, we considered the role played by Trayport in enabling and promoting 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 enabling and promoting competition, and in doing so 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, enabled it to pick certain customers to support in competition with ICE and it potentially influenced the movement of volumes between them.

7.198 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. We concluded that Trayport played an important role in enabling and promoting dynamic competition between venues and that it supported traditionally voice brokered markets, or nascent markets, as they transitioned to electronic trading.

7.199 Overall, we found that all market participants were dependent on the Trayport platform in order to carry out European utilities trading. As a result of this ubiquitous dependence by traders, venues and clearinghouses, we found that the Trayport platform was a critical input for market participants. We concluded that having access to Trayport's services was essential for venues and, to a somewhat lesser extent, clearinghouses in order to compete effectively with ICE in a number of European asset classes where they are already present and/or in order to potentially compete in asset classes where they are not. The existence of some alternative options available for venues to access traders (ie voice broking or alternative front-end screens for exchanges that do not use a Trayport back-end) were not sufficient to undermine the critical importance of the Trayport platform in generating effective competition between venues and clearinghouses in European utilities asset classes. We also found that Trayport plays an important role in enabling and promoting dynamic competition and that it

seeks to influence market structures in favour of its customers, and often in competition with ICE.

8. Competitive assessment

Introduction

8.1 In this section we consider the competitive effects of the Merger taking into account our conclusions in Section 7 on the nature of pre-Merger competition in European utilities trading, and the role of Trayport. In doing so, we take into account the large number and size of submissions from market participants. As set out in more detail in Appendix A, we received submissions and held hearings with exchanges, clearinghouses and brokers, including ICE's main rival venues. We also received submissions from a trade association representing over 100 traders and held hearings with major traders. Third party submissions and summaries of all our third party hearings can be found on our webpages.

8.2 Nearly all those who provided views to us about the Merger expressed concerns about the potential effect on competition. In assessing the competitive effects of the Merger we have critically examined these concerns and assessed them against the Parties' views, evidence from the Parties' internal documents and our assessment of European utilities trading.

8.3 We have assessed vertical and horizontal theories of harm. 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.

8.4 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.[133]

8.5 Consistent with the approach in our *Merger Assessment Guidelines* we assessed the effects of the Merger by reference to the following framework:[134]

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[133] CC2, paragraph 5.6.5.
[134] CC2, paragraph 5.6.6.

(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 total foreclosure, whereby the merged entity may stop supplying its rivals all together, and partial foreclosure, whereby the merged entity could increase the price it charges for the input to rivals.[135] Partial foreclosure can also include reductions in quality of service or other mechanisms which reduce downstream rivals' ability to compete.

8.7 Following our assessment of the vertical issues arising from the Merger, we examined the extent of horizontal competition between the Parties' respective front-end access services. In doing so, we assessed whether a loss of this competition could result in higher prices or a worsened offering to traders as a result of horizontal unilateral effects.

8.8 Finally, we conclude on the resulting likely competitive effects of the Merger in the round absent any countervailing factors.

Vertical effects

Ability to harm rivals

Introduction

8.9 In our issues statement, we set out four areas we would consider in order to assess whether the merged entity would have the ability to harm ICE's rivals post-Merger. Two of these areas were the quality of the alternatives available to services offered through Trayport's software; and whether trading venues using Trayport's software could switch to these alternatives. In Section 7, we reached conclusions on these questions finding that ICE's rivals are dependent on Trayport, alternatives are weak and Trayport has a role in enabling and promoting competition. A third area highlighted in our issues statement was whether there are any barriers to entry and expansion in the provision of software to trading venues and highlighted the relevance of an assessment of the degree of functional integration between Trayport's

[135] CC2, paragraphs 5.6.9 & 5.6.13.

back-end and front-end services. We address this in Section 9 and conclude that barriers to entry are high, in light of the network effects associated with the Trayport platform and as a result of Trayport's Closed API policy, meaning that a rival to the Trayport platform would need to engineer a coordinated shift of liquidity away from it.

8.10 In this sub-section of our report we assessed the fourth limb of the framework for considering ability set out in our issues statement: the mechanisms through which the Merged Entity could harm competitors before reaching our overall conclusions on ability.

8.11 As a starting point, we considered that ICE, as the sole owner of Trayport, would have the ability to control its strategic direction, innovation priorities and/or levels of investment. We considered that in the longer term ICE would have the ability to direct Trayport's strategy and commercial priorities in such a manner that may benefit ICE to the detriment of its rivals. We considered that this was particularly significant in the circumstances of this case. In a complex and dynamic sector such as the software industry, a shift in strategic direction, innovation priorities and/or levels of investment in ICE's favour could have significant consequences for its rivals. Such consequences are likely to play out over the longer term but are significant given ICE's rivals' dependence on Trayport as a critical input into their execution and/or clearing service offerings (see Section 7).

8.12 In Section 7, we also concluded that pre-Merger Trayport was actively engaged in strategies to enable and promote dynamic competition between venues and clearinghouses with a view to creating new markets and/or to shifting nascent or traditionally voice brokered markets onto electronic trading models. We considered that Trayport carried out such a strategy in order to ensure that trading volumes continued to flow through the Trayport platform, and that specific strategies were often aimed at ensuring its customers could effectively compete with ICE; ICE's front-end screen was the only other alternative with significant front-end screen penetration amongst traders.[136] As a result of ICE's ownership of Trayport, we considered that ICE would have the ability to control and direct Trayport's efforts to promote dynamic competition and do so in such a manner that was adverse to its rivals' ability to compete with it.

8.13 We summarise below the evidence on some specific foreclosure mechanisms suggested by third parties during the course of our inquiry and

[136] Trayport's front-end screen penetration rates amongst traders were by far the most significant at 89 per cent (including Trayport dependent screens), with ICE's front-end screen the next highest at 44 per cent and the next most significant with only 6 per cent.

the Parties' response to them before reaching conclusions on their relative likelihood. In concluding on the question of ability, we consider our assessment of specific mechanisms in the context of our broader conclusions summarised in paragraph 8.9 and reach an overall view on the merged entity's ability to harm ICE's rival venues and clearinghouses.

8.14 Based on third party views, we consider the following potential specific foreclosure mechanisms: refusal to supply; increasing prices; lowering service levels; hindering product development and product listing; and use of confidential data. We then consider the arguments of main and third parties on the potential impact on the merged entity's ability to harm rivals as a result of constraints resulting from pre-existing contracts and regulation.

Refusal to supply

8.15 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.

- *Our assessment*

8.16 Taking into account our findings in Section 7 that ICE's rival venues are dependent on Trayport to compete effectively for trades in most European utilities, in our view, the merged entity would clearly have the ability to foreclose ICE's rivals, either individually or collectively, from these trading markets by refusing to supply. The Parties argued that such a strategy would undermine the Trayport business model and therefore would not be feasible. We consider this argument in our assessment of the merged entity's incentives.

Increasing prices to rivals

8.17 Third parties expressed concerns about price rises post-Merger. Engie told us 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.[137] ICAP also raised concerns about the potential for ICE to 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,

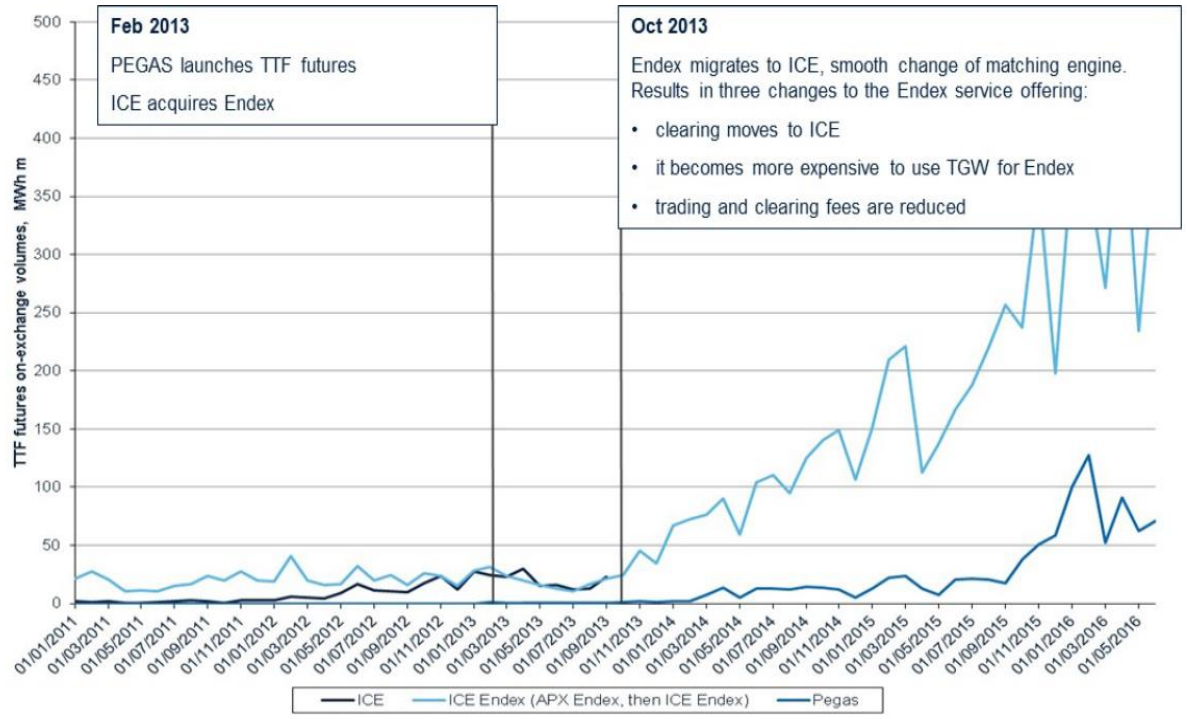
[137] Engie hearing summary, paragraph 20.

thereby promoting ICE at the expense of brokers and traders reliant on Trayport.[138] An exchange also said that ICE could raise prices to disadvantage its competitors.[139]

8.18 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. The fixed nature of the costs meant 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 offer spreads.

8.19 In support of its argument that raising prices would not be an effective means of foreclosing competing venues, the Parties submitted the following case study where there was a specific additional charge for traders using a particular venue (ICE Endex) via Trayport:

Figure 12: Case study - Fee increase to traders



Source: ICE/Trayport: Oxera supporting economic analysis, 15 July 2016, slide 6.

[138] ICAP hearing summary, paragraph 35.
[139] [✂].

8.20 The Parties said that this showed that a significant price increase for traders (around 20%) did not affect traders' decisions of whether or not to trade on ICE Endex.

- *Our assessment*

8.21 First, we considered the case study presented by the Parties. In doing so, important context for our assessment is set out in our conclusion for Section 7, namely, that important aspects of competition take place over a long period of time in this industry. In this case study, we noted that six months after it became more expensive for traders to use Trading Gateway for ICE Endex, Pegas' volumes started to increase steadily for the next two years. We note that, as discussed in Section 7 and Appendix E, there was a general increase in the size of the gas market in this period and therefore it is not possible to conclude that Pegas' volume increase was the result of traders switching from ICE Endex to Pegas following the price increase. However, similarly, we are not persuaded that the short-term lack of switching in response to a price increase in this example demonstrated that price increases to rivals would not harm competition.

8.22 We then considered the Parties' view that raising Trayport fees would not be an effective means of foreclosing competing venues. The Parties submitted that a comparison of Trayport's fees with a venue's EBITDA does not provide a suitable indication of their materiality, or show how an increase in these fees would impact venues' competitiveness. This is because EBITDA may not scale with the size of a business, the ratio of Trayport fees to a venue's EBITDA may not change depending on the pass-through of costs to venues' customers, and because this measure is very sensitive to small changes in EBITDA. The Parties said that overall Trayport's licensing fees represented a very small percentage of rivals' operating costs.[140]

8.23 We agree that Trayport fees represent a small proportion of the total costs of some venues. However, as set out in Appendix B, this proportion varies significantly across venues. Consequently, a significant price increase would likely have an effect on the ability of some rival venues to compete with ICE, particularly, those for which Trayport's licence fees represented a higher percentage of their overall operating costs and/or EBITDA. An increase in operating costs could result in some of ICE's rivals becoming less competitive for execution and clearing fees.

[140] Oxera 'Review of materials provided in the ICE/Trayport merger provisional findings confidentiality ring', 30 September 2016, pages 2-3.

8.24 As we discussed in paragraph 7.10, traders were of the view that, while contract price was a key driver of demand, execution fees were an important secondary factor. We also considered relevant that ICAP said that in recent years venues had become more aggressive with new pricing practices increasing competition. In particular, ICAP suggested that major market making and rebate schemes were particularly common in liquid markets where there was wide choice and intense competition.[141]

8.25 We also consider relevant a Trayport internal document from 2011 discussing its relationship with ICE and attempts to persuade ICE to take Trayport's STP link. This includes an option to [✂]. Further, another Trayport internal document from 2014 notes that [✂]. However, the Parties submitted that this was not evidence showing that Trayport fees affected broker competitiveness.[142]

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

(a) [✂];

(b) [✂];

(c) [✂];

(d) [✂].

8.27 We noted that our financial analysis of certain brokers supports the Parties' view that Trayport accounts for a small proportion of their operating costs (see our analysis of incentives below).[143] However, we also noted that in this internal document Trayport explicitly [✂]. We found that this document provides some indication of brokers' responsiveness to Trayport's software prices.

8.28 We address the Parties' comments on our interpretation of their internal documents in paragraph 7.184. We interpret these documents as providing an indication that Trayport's fees were and remain sufficiently significant for their customers to alter their behaviour in response to a price increase.

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[141] ICAP hearing summary, paragraph 9.
[142] ICE/Trayport response to Provisional Findings, 5 September 2016, slide 13.
[143] 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%.

8.29 Overall, these internal documents are consistent with the idea that venues respond to Trayport price increases in ways which are likely to have implications for their relative competitiveness.

8.30 Therefore, in our view, although there may be limits to the short-term effectiveness, in isolation, of increasing rivals' costs to shift volumes, Trayport prices are an important factor in venues' costs. We considered that increasing rivals' Trayport costs would likely harm their ability to compete with ICE for the execution and/or clearing of trades over the longer-term.

Lowering service levels

8.31 Venues were also concerned about the general lowering of service levels post-Merger. 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.[144] 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.[145]

8.32 Brokers were similarly concerned about service levels 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.[146] Griffin stated [✂].

8.33 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. 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. [147]

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[144] [✂].
[145] NASDAQ hearing summary., paragraph 31.
[146] ICAP hearing summary, paragraph 34.
[147] CME hearing summary, paragraph 29.

8.34 In response to these concerns, the Parties made a number of points. 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).

8.35 The Parties also made a number of further points specifically related to the potential to withhold software updates:

(a) Trayport regularly finds that clients often prefer to continue with existing software for as long as possible and can be slow to upgrade. For example, they said that three ETS customers last upgraded in 2012, with minor upgrades in December 2014, despite a major upgrade being made available in October 2015.

(b) The Parties distinguished between two types of upgrades: (i) major upgrades, and (ii) incremental enhancements. They said that major upgrades were prompted by external factors such as regulatory changes and that a refusal to develop or to develop these upgrades on a timely basis would put brokers at risk and would ultimately be equivalent to total foreclosure. Incremental enhancements were invariably requested by clients and Trayport was not a driver of innovation. In both cases the Parties stated that this mechanism of foreclosure would be ineffective unless bilateral OTC trading was diverted on-exchange and only if Trayport were to foreclose ICE's rival exchanges in order to divert trading to ICE.

(c) Even if Trayport attempted to withhold upgrades, which would be known by its customers and difficult to implement, this would have little or no impact on ICE's rivals since it is possible to continue operating as

normal on existing older versions of Trayport software for an extended period of time.[148]

8.36 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.

- *Our assessment*

8.37 We considered that the Parties' submission focussed mainly on incremental changes and upgrades to the BTS and ETS software. Firstly, we noted that, alongside incremental changes, Trayport also needs to implement major updates to the software. We did not consider that the fact that three ETS clients did not update their software even if a major change to the software was available was sufficient to conclude that major upgrades are therefore usually not taken up by venues and/or are not important for rivals to compete on an equal footing for the execution and clearing of trades. Notwithstanding the prompts for major upgrades by external factors such as regulatory changes, we considered that if rivals were to experience, for example, increasing difficulties in receiving major updates in a timely manner, there is currently no viable and effective alternative to Trayport to which market participants could switch to in the short-term in order to overcome such an impediment.

8.38 In our view, the evidence shows service levels and upgrades could also be used to harm ICE's rivals that use their own back-end but list their products and prices on Joule/Trading Gateway (ie GV Portal users). We noted that some of Trayport's internal documents highlight [✂]:[149]

'[✂].'

8.39 In another internal document dated 2013 Trayport states:[150]

'[✂]'.

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[148] ICE/Trayport response to Provisional Findings, 5 September 2016, slide 11
[149] [✂]
[150] "Initiative: Execution platform scalability and reliance. Initiative overview"

8.40 The internal document goes on to indicate that the high-level scope is to '[✂]'. It further states that '[✂]'.

8.41 We considered relevant that in this internal document Trayport indicated as its priority solving the problems arising for [✂] suggesting that it was not a strategic priority to update [✂]. In our view, this internal document provides evidence that Trayport has the ability to prioritise its resources between different types of venue and consequently to harm particular venues by withholding or delaying such support.

8.42 We recognised that these internal documents are three years' old and technology may have improved since then. For example, as set out in paragraph 3.18, 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 a SaaS model. This demonstrates how technology evolves and develops. However, we are not aware of any current plans to shift venue and clearinghouse customers to a SaaS model meaning that Trayport will need to continue to work with these customers when developing and installing upgrades.

8.43 We interpreted these internal documents as showing that there is continuous and complex development work that Trayport needs to carry out in order to ensure that ICE's rivals can successfully compete. In our view, this is consistent with what we would expect given the complex network of different software products that work together to form the Trayport platform which services traders, exchanges, brokers and clearinghouses.

8.44 With respect to the Parties' specific submissions on clearinghouses, we concluded in Section 7 that 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 functionality compared to Trayport's offering. However, clearinghouses do seem to rely to some extent on Trayport to reach a significant level of distribution for their clearing products in the European utilities market. The importance of access to Trayport's Clearing Link, and the Trayport platform as a whole, is also evidenced by some exchanges' willingness to enter into revenue sharing agreements which we were told was an exceptional payment arrangement with an ISV. We therefore considered that a fall in service levels and a reduction in functionality would give ICE the ability to affect its clearinghouse rivals' service.

8.45 We do not agree with the Parties that visibility of reduced service levels would necessarily affect the ability of the merged entity to harm rivals in this way. We consider it relevant that the nature of software services means it

may, at times, be difficult for customers to understand fully whether service levels have reduced relative to rivals or why. However, more importantly, as we describe in Section 7, alternatives to Trayport are weak and therefore it is very difficult for traders and venues to switch away from the Trayport platform in response to reduced levels of service.

8.46 Overall, our view is that the concerns of third parties about lowering of service quality are likely to be well-founded given the evidence on the ongoing need to maintain and upgrade the Trayport platform especially in response to the evolution of European utilities markets. We do not expect the concerns of third parties to be exhaustive in setting out the ways service quality might be reduced but in our view they are informative of the importance of service levels for venues. Taking into account the importance and complexity of Trayport's services development, we consider it more likely than not that reductions in service levels could be used to harm rival venues.

Product development and listing

8.47 Venues were also concerned about the merged entity's ability to influence the way new products were brought to market and in ways that would provide an advantage to ICE compared with its 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.

8.48 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. [✂].[151]

8.49 In response, the Parties told us that delaying listing of products to give ICE a first-mover advantage is very broadly alleged and cannot be relied upon without specific details or examples of how innovation would occur in the future.[152] In addition, any such action would be easily identifiable and damaging to the Trayport core proposition.

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[151] CME hearing summary, paragraph 30.
[152] ICE/Trayport response to Provisional Findings, 5 September 2016 slide 33.

8.50 The Parties also noted that launching new contracts was a mechanical process and that, consequently, there was a clear industry understanding of what was involved and how long it should take. In addition, since new contracts were developed with the support of traders, market participants were aware of rivals' new products months before they were released. [153]

8.51 Specifically, the Parties said that, in order to launch new products for BTS and ETS customers, Trayport carries out a straightforward IT support function. Trayport does mapping and some configuration for venues, and some venues do configuration themselves, in order to display a product on Joule/Trading Gateway. The Parties further told us that, for GV Portal customers, configuration is always carried out by the exchanges that have their own back-end and that these exchanges do not need Trayport to make changes to what is available via GV Portal. Regarding Clearing Link users, the Parties said that brokers do the mapping of clearinghouses' new products themselves for displaying on their direct screens and that, in any case, it is a fairly standard and mechanical process to send the clearing identifier.[154]

8.52 The Parties also said that the evidence on credit API is specific to Griffin which has a lower headcount compared to other brokers and, in any case, is not relevant to other brokers who use a manual solution. The Parties told us that the alleged importance of the feature to Griffin is erroneously conflated with its importance to "the OTC market" as a whole and that, as an alternative to this potential new feature, Griffin could simply increase its support team's headcount by a few people.[155]

8.53 Lastly, the Parties said that even if ICE were to delay rivals from innovating for a short period of time, given the regulatory requirements facing ICE, it would be unlikely that ICE could leapfrog brokers in bringing an innovation to market. ICE estimates that obtaining the necessary regulatory approval to launch a new contract takes around four months; in comparison, it estimates that a broker could launch a new contract in a matter of days.[156]

- *Our assessment*

8.54 Based on our assessment of competition between venues and between clearinghouses in Section 7, our view is that dynamic competition is an important competitive constraint in this industry and that, given the network

[153] ICE/Trayport response to Provisional Findings, 5 September 2016 slides 27 and 32.
[154] ICE/Trayport response to Provisional Findings, 5 September 2016, slides 10 to 12.
[155] ICE/Trayport response to Provisional Findings, 5 September 2016, slide 12.
[156] Oxera Economic critique of the CMA's provisional findings, 5 September 2016.

effects associated with liquidity, venues and clearinghouses can benefit from first-mover advantages. Moreover, we considered that third parties provided specific examples of mechanisms that could be used to delay the introduction of their new products.

8.55 The Parties' submission focussed on copycat or vanilla products that are broadly similar to those already listed on the Trayport platform and that require Trayport to carry out a mechanical process. Nevertheless, even when the development work is minimal and mechanical, Trayport would still have the ability to frustrate ICE's rivals' plans to launch new products given it is the gatekeeper that comes between traders and rivals' venues/clearinghouses.

8.56 We also considered that there are some products, such as innovative products or new products listed for the first time by a venue/clearinghouse, that require Trayport to carry out more significant development work. This applies to BTS, ETS, GV portal and Clearing Link clients alike. In these cases, Trayport would have a greater ability to hinder ICE's rival venues' and clearinghouses' ability to compete when launching more complex and innovative products.

8.57 However, we recognised that the effectiveness of this mechanism may vary across Trayport's clients. As indicated by third parties, venues which use Trayport's back-end (ie ETS and BTS users) rely substantially on Trayport for the correct and timely configuration and mapping of their new products on Trading Gateway. Venues that use their own back-end and clearinghouses that license Trayport's Clearing Link rely to a lesser extent on Trayport to carry out such development as they, for example, can configure new products themselves. Nevertheless, we noted that the Parties told us that to implement GV Portal users' new products Trayport still needs to '[✂]'.[157] In relation to clearinghouses the Parties provided two examples of situations where Trayport had to carry out some development work to allow clearinghouses to launch new products: [✂].[158]

8.58 In our view, Trayport could delay the launch of exchanges' new products for a short period of time and, in doing so, ICE could more easily gain a first-mover advantage given that ICE and its exchange rivals take a similar time to gain the necessary regulatory approvals. The fact that brokers require a shorter period of time to launch new products compared to exchanges does not in itself prevent ICE from using this mechanism to foreclose brokers.

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[157] ICE/Trayport response to Provisional Findings, 5 September 2016, Annex 3: Launch of new products page 3.
[158] ICE/Trayport Response to Provisional Findings, 5 September 2016, Annex 3: Launch of new products, page 1.

Even if these actions were discoverable and attributable to Trayport, there is currently no viable alternative to Trayport to which market participants could switch.

8.59 We accept the Parties' point that the credit API may be a functionality specifically used by Griffin. However, we considered it a relevant example showing that Trayport remains important to product innovation and providing means by which venues can differentiate their offering. Moreover, it is relevant to our assessment that rival venues may have bespoke functionality provided by Trayport on which they rely. Any strategy by the merged entity to harm rivals may include targeting individual venues as well as actions that would harm all rivals in a similar way.

8.60 Taking into account our assessment of the dynamic competition between venues described in Section 7, we attach particular weight in our considerations to the ability of the merged entity to delay and restrict innovation and development by rival venues. Based on the views and evidence we have considered, the merged entity would, in our view, have the ability to harm rivals by delaying and frustrating potential product developments which are likely to be a feature of dynamic markets.

Use of confidential data

8.61 A number of third parties raised concerns about ICE having access to detailed transaction data as well as 'soft' disclosure of information about rivals' products and strategies.

8.62 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.[159] For example, Pegas said that it was common for it to discuss product plans with Trayport a year in advance. It said this arrangement would not be 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.[160] 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.[161]

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[160] Powernext hearing summary, paragraph 24.
[161] EEX hearing summary, paragraph 24.

8.63 Engie said that ICE owning Trayport would give it access to 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.[162] 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-Merger, [✂], or act in some other way that could be damaging for CME's plans.[163]

8.64 In response, Trayport submitted that confidential customer data is stored and used in such a way that disclosure to a third party, such as ICE, is not possible. Trayport pointed to stringent safeguards in operation and their strict enforcement. It noted that where Trayport hosts software on behalf of its customers, if it were to access information without a legitimate business purpose and/or permission this would be a flagrant breach of its information security protocols and contractual obligations. Firewalls and permissions are set to limit access to those who would have a valid technical support reason.

8.65 Trayport also submitted that it is subject to the ISO/IEC 27001 information security management standard – a comprehensive and audited set of policies with legal and technical controls which would prevent non-permitted disclosures. Each venue contract also contains a contractual restriction on the use of confidential information and breach of this term would give rise to a financial liability. ICE also submitted that it adheres to policies with a strong emphasis on protecting customer information and is a heavily regulated entity, which is routinely audited. Both ICE and Trayport considered confidentiality important to their reputation and business model. Publicity surrounding a breach could, they argued, have drastic consequences.

8.66 On the sharing of 'soft' confidential information relating to its rivals' interactions with Trayport, 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. [164] Ownership of Trayport would not therefore give ICE an advantage over other venues.

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[162] Engie hearing summary, paragraph 21.
[163] CME hearing summary, paragraph 39.
[164] ICE/Trayport response to Provisional Findings, 5 September 2016, slide 28.

- *Our assessment*

8.67 We broadly agreed with the Parties that Trayport's policy, procedural and technical restrictions on the sharing of sensitive transactional information were likely sufficient to preclude such information sharing. We did not think it likely that customer's trade level information (or data) would be passed to ICE, thereby putting it at a competitive advantage.

8.68 However, we distinguished this from the sharing of information about product developments and customer requests. In our view, this type of information sharing is likely to be of significant advantage to ICE. It would be easier for such sharing to bypass restrictions because information could be shared orally, would likely be available to senior employees with access to employees of other ICE businesses, and would not require access to securely stored electronic data. Disclosure of such information would be difficult to detect or prove. Whilst we acknowledge that venues inform the market of some product developments before notifying or making arrangements with Trayport, the evidence from third parties was consistent and persuasive that this is not always the case. 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 feasible were ICE to own Trayport as it may leak back to ICE, giving it the ability to foresee market changes and launch projects before its competitors. [165] 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. [166]

8.69 Again, our assessment of dynamic competition in Section 7, suggests to us that there are likely to be important instances where ICE could obtain a significant advantage from obtaining prior warning of innovation from rivals. This would particularly be the case if this was combined with the delay or frustration of product developments by Trayport. This would apply in particular to product features where it is not necessary to gauge demand in advance or where the venue discusses plans confidentially with traders and/or Trayport and the information would not otherwise leak through to other venues ahead of public announcement.

8.70 In summary, we were not persuaded that confidential information about individual trades was likely to be used to harm rivals post-Merger. However, we concluded that ICE would have the ability to gain a competitive

[165] Powernext hearing summary, paragraph 24.
[166] EEX hearing summary, paragraph 24.

advantage over its rivals through the access of 'soft' information regarding its rivals' product information and developments through its ownership of Trayport.

Contractual and regulatory protections

8.71 We assessed whether there were contractual and/or regulatory constraints which would undermine the ability of ICE to harm its rivals through ownership of Trayport.

8.72 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:

(a) Its key exchange rivals, [✂], have [✂] contractual protection through their agreements with Trayport, given the length of the initial terms remaining and the fact that variation of the contracts requires the customer's consent. It is therefore not possible for ICE to alter the quality or price of the services Trayport is contractually obliged to provide.

(b) [✂].

(c) Most of the confidential customer information held or accessible by Trayport is not competitively sensitive as between ICE and its rivals. The most sensitive is trading activity at a user level but even then it is debatable whether giving ICE access to this information could give ICE an appreciable advantage over its competitors. In any event, due to confidentiality constraints in its contracts and data ownership remaining in the hands of Trayport customers, Trayport is contractually restricted from sharing or utilising such confidential customer information with third parties including affiliates within the ICE Group, In addition, Trayport has stringent information security procedures which further protect customer confidential information.

(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.

8.73 The Parties also said that some of the foreclosure mechanisms suggested by third parties would require Trayport to infringe financial sector regulation which could give rise to criminal and/or civil risk. In particular, the Parties said that, for regulatory reasons, Trayport could not systematically and deliberately interfere in the price display and aggregation across venues. The Parties referred to the criminal offence of creating misleading impressions under section 90 of the Financial Services Act 2012 and a civil offence of market manipulation under Article 15 of the Market Abuse Regulation.

8.74 Third parties 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.

8.75 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.[167] 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.

8.76 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. Pegas 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.[168]

8.77 Third parties also commented that the contractual provisions in respect of confidentiality might not prevent disclosure of sensitive information,

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[167] [✂].
[168] Powernext hearing summary, paragraph 26.

particularly where it would be difficult for the affected party to detect a breach.[169,170]

- *Our assessment*

8.78 We considered carefully the arguments of the Parties and third parties about the extent to which, contractual protections could be sufficient to preclude the ability of the merged entity to harm its rivals.

8.79 In particular, we reviewed Trayport's key venue contracts. We found that:

(a) typically, the contracts are for an initial fixed period (usually for 3 years or 5 years) with a twelve month notice period allowing for automatic rollover if neither party terminates. Usually, the contracts cannot be terminated unilaterally in advance of the fixed term in the absence of a material breach or insolvency. The length of the initial fixed term remaining varied as between customers; [✂];

(b) typically, variations must be agreed to by both parties;

(c) [✂];

(d) the support and service level obligations oblige Trayport to support the software and ensure that it meets the specifications for the duration of the contract, with reasonable skill and care. The contracts generally state that Trayport is to provide the initial version of the software and subsequent scheduled new versions when available. The contracts do not impose a general obligation on Trayport to actively support the enhancement and development of services provided to venues;

(e) typically prices are based on a fixed fee per user or range of users and a minimum guaranteed monthly payment. [✂];

(f) typically, the contracts limit the liability of both parties [✂]. Generally however, the contracts excluded liability of either party for loss of profits, business, revenue, goodwill and reputation; and

(g) typically, the contracts had comprehensive confidentiality terms. These generally restricted Trayport's use of transaction and other commercially sensitive data acquired as a result of the contracts, to use solely for the purposes of the contract (eg support services). The confidentiality terms also precluded Trayport from transferring data to third parties without

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[169] Griffin hearing summary, paragraph 30.
[170] RWEST hearing summary, paragraph 29.

consent, including affiliates such as ICE, except as is required for a third party's performance under the contract.

8.80 Based on our review of these terms, our view is that:

(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 a number of strategies and specific mechanisms that Trayport could use Trayport 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 whether third parties could enforce FRAND or MFN terms as a result of information asymmetry. Further, it is unclear whether service levels could be adequately protected by FRAND or MFNs 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 some would be difficult to detect.

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

8.82 We were also not persuaded that regulation removed the ability of the merged entity to harm rivals. Both of the offences specified by the Parties rely broadly speaking on affecting the market or price of financial instruments traded. We do not consider that any of the foreclosure strategies or mechanisms highlighted by third parties and discussed in this section would necessarily result in an infringement of either of the provisions.

Conclusion on ability to harm rivals

8.83 We considered particularly relevant to our assessment of ability the fact that ICE, as the sole owner of Trayport, would have the ability to control its strategic direction, innovation priorities and levels of investment. In the longer term, ICE would have the ability to direct Trayport's strategy and commercial priorities in such a manner that may benefit ICE to the detriment of its rivals.

8.84 In Section 7, we also concluded that pre-Merger Trayport was actively engaged in strategies to promote dynamic competition between venues and clearinghouses with a view to creating new markets and/or to shifting nascent or traditionally voice brokered markets onto electronic trading models. We considered that Trayport carried out such a strategy in order to ensure that trading volumes continued to flow through the Trayport platform, and that specific strategies were often aimed at ensuring its customers could effectively compete with ICE. As a result of ICE's ownership of Trayport, we considered that ICE would have the ability to control and direct Trayport's efforts to promote dynamic competition and do so in such a manner that was adverse to its rivals' ability to compete with it.

8.85 We considered carefully the views of third parties and the main parties, and concluded that there are a range of mechanisms through which the merged entity would have the ability to harm ICE's rivals. These include a refusal to supply; increasing prices; lowering service levels; delaying and frustrating product development and innovation; and using confidential knowledge of rivals' plans and innovations.

8.86 We were not persuaded by the Parties' arguments that there were features of the market which would prevent such mechanisms intended to harm ICE's rivals from being implemented. However, we accept that individual mechanisms may be more effective at different times and when used against particular venues or types of venue. For example, strategies to harm rivals might involve targeted mechanisms at individual venues or types of venue. Similarly, they might involve a combination of mechanisms targeted at a particular venue. Our analysis of historical shifts in liquidity described in Section 7 suggests that a combination of, for example, increased prices,

delays to new products and a lowering quality of service would likely harm a rival venue's ability to challenge ICE's incumbent position or defend a concerted strategy by ICE to gain liquidity from a rival. Further, we found that regulation and pre-Merger contracts did not provide sufficient protection for rival venues against such strategies.

8.87 Therefore, taking into account our assessment of specific mechanisms by which the merged entity could harm rivals, our findings on the role of Trayport and rivals' dependency on it in Section 7 and on barriers to entry in Section 9, we conclude that the merged entity would have the ability to harm rivals.

8.88 In line with our guidance below we go on to consider the merged entity's incentives.

Incentive to foreclose

8.89 We assessed the merged firm's incentive to foreclose ICE's rivals in four steps: firstly, by setting out the Parties' views, secondly, by setting out those of third parties, thirdly, by presenting our own assessment, and finally by presenting our conclusions on incentives.

Parties' views

8.90 The Parties submitted that our partial foreclosure theory of harm relies on mechanisms that could put ICE's rivals at a substantial competitive disadvantage whilst being hard to detect by market participants. They stated that it was implausible to believe that such hard-to-detect but effective foreclosure mechanisms could exist. If a mechanism had an impact on market outcomes it would as a result be detectable, and therefore would result in costs to both Trayport and ICE.[171]

8.91 The Parties submitted that GFI's prior ownership of Trayport provides compelling evidence that ICE will not use it strategically against its competitors, because there are a number of similarities between the two scenarios.[172] Specifically, that GFI is also a major trading venue with a strong position in a number of European utilities, that it has its own front-end technology (used in US gas and power), and that its closest rivals all use Trayport's software. The Parties submitted that, despite this, GFI did not attempt to use Trayport to undermine these rivals. The Parties also submitted that GFI would have had a greater ability and incentive to

[171] ICE/Trayport response to Provisional Findings, 5 September 2016, slide 5 & 8.
[172] ICE/Trayport initial submission, paragraphs 4.1–4.5.

foreclose venues than ICE because it would be easier for it to divert OTC trading from other brokers, all of whom were dependent on BTS, and because ICE is a highly regulated and more diverse company exposed to greater risks of retaliation and reputational damage.[173]

8.92 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.[174] 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.[175] 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.[176]

8.93 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 to 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.[177]

8.94 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

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[173] ICE/Trayport response to Provisional Findings, 5 September 2016, slide 17.
[174] ICE/Trayport initial submission, Annex 3, slide 3.
[175] ICE/Trayport initial submission, paragraphs 5.7–5.10 & 6.3–6.4 and ICE/Trayport response to Provisional Findings, 5 September 2015, slide 8.
[176] ICE/Trayport initial submission, paragraph 6.7.
[177] ICE/Trayport initial submission, Annex 3, slide 2.

important interim step which enabled markets to develop and grow and move to exchanges naturally, without foreclosure.[178]

8.95 In terms of the costs that the merged firm could suffer by foreclosing its rivals, the Parties emphasised two major financial risks that they would face. First, the Parties 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.[179]

8.96 Second, the Parties submitted that ICE's exchanges and clearinghouse would face substantial costs from retaliation by market participants switching their trading activity to a rival exchange/clearinghouse or to OTC trading.[180] 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. The Parties said that traders would collectively have the ability to shift ICE markets to other venues, and this might happen if they lost trust in 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.

8.97 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, its remaining coal clearing and its substantial oil revenue and potential unrelated markets too as ICE is reliant on the same relationships with traders and brokers in other unrelated markets. [181]

Third parties' views

8.98 As discussed in detail in the preceding sections, many exchanges, brokers and clearinghouses have raised concerns about the prospect of ICE controlling Trayport on the basis that it will use its control of the Trayport

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[178] ICE/Trayport response to Provisional Findings, 5 September 2016, slide 32
[179] ICE/Trayport initial submission, paragraph 12.7 and Appendix 3.
[180] ICE/Trayport initial submission, paragraphs 11.1–12.11 and Annex 3 and ICE/Trayport response to Provisional Findings, slide 15 and Annex 4, paragraph 3.25 to 3.34.
[181] ICE/Trayport response to Provisional Findings, slide 15 and Annex 4, paragraph 3.25 to 3.34.

platform to benefit its own exchange and clearinghouse and at the expense of its rivals. In addition, The European Federation of Energy Traders (EFET), acting on behalf of its more than 100 members, and presenting itself as representing the main user community of Trayport, submitted that it expected the acquisition to have serious anticompetitive implications which would harm its members. [182] All of these comments typically referred not simply to the hypothetical possibility that ICE could harm its rivals, but raised concerns that it would actually do so in practice. We therefore find that this substantial weight of third party evidence, which comes from the full range of industry participants, is relevant to the question of whether ICE would have an incentive to foreclose its rivals.

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

8.100 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

8.101 Below we set out our assessment of the merged firm's incentive to foreclose its rivals in five steps:

(a) first, we consider the appropriate approach to the analysis of incentives in this case;

(b) second, we analyse the benefits to the merged firm of foreclosure;

(c) third, we analyse the costs to the merged firm of foreclosure, separately both for partial and total foreclosure;

(d) fourth, we discuss the quantitative analysis of foreclosure; and

[182] EFET submission to CMA, dated 20 September 2016.

(e) finally, we consider the Parties' submission on the comparison between GFI and ICE's ownership of Trayport.

- *Approach to the assessment of incentives*

8.102 We primarily analysed the Parties' incentives to foreclose ICE's rivals through a qualitative assessment.[183] This involved consideration of the costs and benefits to the merged entity of carrying out a foreclosure strategy. In carrying this out, we undertook a combined assessment of whether the merged firm would have an incentive to foreclose exchanges, brokers and clearinghouses. 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.[184] 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 appropriate to consider them collectively.

8.103 In assessing the Parties' submissions on whether the merged firm would have an incentive to foreclose its rivals, we then considered how much weight it was appropriate to place on any quantitative analysis of this issue. An important consideration here was the time frame of our assessment, and in particular our view that, given the importance of dynamic competition that plays out over the course of several years, it is appropriate for us to take a relatively long-term view on the impact of the Merger.

8.104 In light of this long time assessment horizon, and the specific features of this industry, our view is that a quantitative assessment – particularly if it seeks to be highly detailed – will not be particularly informative of the Parties' foreclosure incentives. We reached this view on the basis of a number of factors:

(a) The mechanisms of foreclosure identified above primarily relate to Trayport's strategy around what initiatives to promote, as well as the listing of rivals' new products and prioritisation of software developments that may only emerge in future. Therefore, we necessarily could not

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[183] 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* (Competition Commission, A report on the anticipated joint venture between BBC Worldwide Limited, Channel Four Television Corporation and ITV plc relating to the video on demand sector, 4 February 2009). The Parties submitted that these precedents could be distinguished. We considered that the cases did offer appropriate examples of the principle that firm quantitative assessments were not always required.

[184] For example, brokers purchase the BTS software from Trayport, while exchanges purchase ETS or GV Portal, and clearinghouses use Trayport's Clearing Link. We also found that exchanges are closer competitors to ICE than brokers in the provision of execution services, and that clearinghouses are less dependent on Trayport than execution venues.

identify the specific changes that Trayport would make and quantify how this would affect the competitiveness of each of ICE's rivals.

(b) In addition, while a loss of competitiveness may result in a reduction in the volumes hosted by ICE's rivals in the longer term, as discussed below, the precise impact on specific products is unavoidably harder to predict in this industry than most because liquidity is sticky and tends to gather on a certain venue for a particular asset class. As discussed in Section 7, the importance of liquidity and open interest gives rise to strong network effects. The implication of this is that in response to a loss of competitiveness a rival may suffer only a very limited loss of volumes in some products, but a very dramatic loss in others, with it being difficult to identify in advance exactly where these large shifts in volumes will take place. This difficulty is exacerbated by the need to base this forward-looking long-term analysis on historical data, which may not reflect prevailing circumstances in the market as and when these foreclosure mechanisms are gradually introduced in the future.

8.105 As a result of these complexities, any quantitative analysis will unavoidably need to make a number of speculative assumptions about the potential long-term gains and losses of foreclosure for the merged firm. This is particularly the case if a quantitative analysis was to be attempted on a detailed product-by-product basis, as this would require several assumptions being made for each of the approximately two dozen European utilities products hosted by the Parties and their rivals. Our view is therefore that a quantitative analysis will not be particularly informative of the merged firm's incentives to foreclose its rivals.

8.106 Nevertheless, we quantitatively analysed the likely gains and losses to the merged firm of a partial foreclosure strategy and found that all of the scenarios considered in our quantitative assessment supported our qualitative assessment.

- *The benefits of foreclosure*

8.107 We first noted that, pre-Merger, ICE and Trayport had conflicting incentives. 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 that it was [✂].

8.108 In contrast, ICE's goal has been, and continues to be, to have as much trading as possible concentrated on its venues and clearinghouse. This raises the prospect that under ICE's control Trayport's focus will change

from supporting continued competition between multiple venues and clearinghouses, to actively trying to move liquidity towards ICE's venues and clearinghouse at the expense of rival exchanges, brokers and clearinghouses, through the use of the various mechanisms discussed in our assessment of its ability to foreclose above.

8.109 We considered in more detail whether the merged firm would want to engage in either the total or partial foreclosure of ICE's rivals using the various mechanisms outlined in the previous section on Trayport's ability to foreclose. As set out in that section, our view is that the use of these mechanisms by the merged firm would have a substantial negative impact on the competitiveness of ICE's rivals. As a result of the delays in listing their products, restricted functionality of the software they rely on, and the potential leaking of their confidential 'soft' information resulting in a loss of first-mover advantage, rival venues and clearinghouses would find it more difficult to attract and retain the business of traders, who would be more disposed to use ICE instead. This is particularly the case in light of our view that here it is appropriate for us to take a relatively long-term assessment horizon, over which this impact on volumes is likely to be substantial.

8.110 In assessing the impact of these total and partial foreclosure mechanisms, 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. In light of these findings, we identified five potential benefits to ICE's execution and clearing activities of using Trayport to engage in total and/or partial foreclosure of ICE's rivals.

8.111 First, ICE would over time 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.[185] ICE already has liquidity and open interest in each of these products and it is an existing head-to-head competitor to these rivals. It is therefore likely to be seen as a particularly effective alternative to them in the eyes of traders.

[185] 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.

8.112 Second, total and/or partial foreclosure of ICE's rivals would help to prevent ICE's rivals from challenging ICE to win its volumes in the future 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 7.177 to 7.179 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 engaging in total and/or partial foreclosure of its rivals.

8.113 Third, where there are pre-existing long-term industry trends, ICE would be able to use its control of Trayport to accelerate these and direct them in its favour. In particular, it may 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 can likely direct traders to adopt ICE's exchanges and clearinghouse as they do so by making rival clearinghouses and exchanges less attractive. 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.[186]

8.114 Fourth, total and/or partial foreclosure could over time help ICE to obtain volumes from its rivals in those existing products where it has little or no current position, for example German power. 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

[186] 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.

substantial, implying that overall this would constitute a material benefit of foreclosure.

8.115 Fifth, ICE's control of Trayport would likely help it to gain control of new markets and segments as these emerge in future, which is particularly important given that dynamic competition is important in this industry, and that important first-mover advantages exist. 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. We did not accept the Parties' submission that ICE would have every incentive to support these developments as part of the typical evolution of products towards exchange trading, as our concern is not just that ICE would stop these developments but also that it could steer them in its favour.

8.116 We found in our assessment of ICE's ability to foreclose that, in light of the complex and multifaceted nature of the Trayport platform, ICE would in the long run be able to exercise a high degree of flexibility over a partial foreclosure strategy. As a result, in terms of ICE's incentive to engage in partial foreclosure to obtain these benefits, we find that it would be able to use this flexibility to engage in the targeted foreclosure of specific rivals in individual products where it saw the greatest benefit for ICE's exchanges and clearinghouse.

8.117 For example, ICE could make it difficult for any rival to launch new products that might challenge its own. Over time ICE could also substantially reduce investment and support for the ETS back-end and GV Portal software relied on by its rival exchanges, and the benefit of foreclosing these rivals – in particular EEX – is likely to be particularly large (as these are ICE's closest competitors) and the costs particularly small as these account for a smaller share of Trayport's overall revenues.

8.118 Based on this assessment, our 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*

8.119 We considered the costs of potential partial and total foreclosure strategies separately.

- *Partial foreclosure*

8.120 On the costs of partial foreclosure, we first considered the Parties' point that they could face substantial costs in terms of lost revenues from Trayport's business activities, and the associated reduction in the value of the Trayport business, as a result of undermining its business model. While we found that they could face some costs in this regard, our view is that the magnitude of these costs is likely to be small.

8.121 As set out above, we reached this view on the basis that all of the brokers active in European utilities trading, 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 as a result of the strong network effects in this industry (see Section 9). The fact that partial foreclosure would take the form of incremental changes also means that it would not fundamentally undermine the Trayport platform, and therefore would not force market participants to use an alternative.

8.122 In addition, as set out in our discussion of Griffin's attempted entry and Project Trafalgar (see paragraphs 7.123 and 7.124 and Appendix D), to the extent that venues have historically considered an alternative to the Trayport platform, in some 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. As discussed in Section 9 below, we recognise that brokers have also sought to partner with other third parties and these have not been successful. Collectively, these facts mean that market participants are highly unlikely to switch away from Trayport.

8.123 We then considered the Parties' second point, that ICE's exchanges and clearinghouse would face substantial costs from retaliation by market participants switching their trading activity away from ICE to a rival exchange/clearinghouse or to OTC trading. Our view is that these potential costs are unlikely to emerge in practice. This is because if traders sought to punish ICE, there would be a cost to switching away from ICE's services to alternatives they had previously rejected. This is particularly so given that, as a result of partial foreclosure the attractiveness of these alternatives will be diminished. In essence, such retaliation would require traders to respond to a decrease in the attractiveness of ICE's rival venues and clearinghouses by switching to using them more – the opposite of the reaction we would expect. As a result, we find that such retaliation is not credible, and therefore that the threat of this would not constrain the merged firm's behaviour.

8.124 We also considered the Parties' point that ICE is dependent on brokers to submit OTC trades to its clearinghouse, and that these brokers could

therefore potentially retaliate against ICE by steering these volumes to rival clearinghouses. 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, so brokers would not be able to retaliate in this way.

8.125 In response to our Provisional Findings the Parties submitted that, although traders are indeed ultimately responsible for the choice of clearinghouse, brokers can also have some influence. They pointed to the fact that clearinghouses offer material incentives programmes to brokers, which they told us would only be rational if brokers can direct clearing flow.[187] We put this point to brokers, who unanimously told us that, while in a very small number of cases they may have some say on the choice of clearinghouse, for the vast majority of trades they have no such influence. Four brokers also indicated that these rebates are paid in return for brokers providing clearinghouses with valuable market data on closing prices, which allow clearinghouses to settle contracts accurately. We therefore did not accept the Parties' point here, and maintain our view that brokers could not retaliate against ICE by diverting a meaningful volumes of trades to rival clearinghouses.

8.126 These reasons all suggest that the costs of partial foreclosure – both from undermining Trayport's business model and retaliation against ICE's exchanges and clearinghouse – are likely to be low. We then took into account an additional factor that would reduce the costs of partial foreclosure yet further, specifically the fact that many – though not all – of the potential mechanisms the merged firm are likely to use will be difficult for market participants to even detect and attribute to a specific action and intention of the merged entity, meaning that they are particularly unlikely to trigger a response. This is because the merged firm is most likely to make a series of incremental changes over time, and in many cases these will result in the slowing of improvements and reduced innovation, rather than an absolute reduction in the quality of existing services.

8.127 The difficulty that market participants may face in clearly identifying partial foreclosure mechanisms is likely to be even greater in the case of traders than venues and clearinghouses. Traders are one step removed from the partial foreclosure strategies that the merged firm would likely implement against ICE's rivals, and may be particularly unlikely to identify any impact on dynamic competition such as the slowing of improvements and new services they have not previously enjoyed, as noted above, and to attribute

[187] Oxera Economic critique of the CMA's provisional findings, 5 September 2016, paragraphs 3.26-3.27.

this to ICE's ownership. As a result, traders are particularly unlikely to consider retaliating against ICE or switching to an alternative platform as a result of partial foreclosure.

8.128 We did not accept the Parties' submission that our partial foreclosure theory of harm relies entirely on mechanisms that could put ICE's rivals at a substantial competitive disadvantage whilst being hard to detect. As set out above, our concern also includes mechanisms that would be detectable and attributable, because it is still highly unlikely that market participants would retaliate against ICE or switch to an alternative system to Trayport in response to these partial foreclosure strategies. However, our view is that many – though not all – of these mechanisms would be difficult to detect particularly with respect to partial foreclosure mechanisms intended to reduce the threat of potential competition and dynamic competition for new markets. Put simply, we did not accept the Parties' submission that it is implausible that there could be partial foreclosure mechanisms that are effective yet difficult to detect, given the context that this is a dynamic market and our focus is on the slowing of improvements and new services that market participants have not previously enjoyed. Moreover, it is clear that a lack of action, eg Trayport no longer actively pursuing strategies to shape competition between ICE and its rivals, would not be detectable.

8.129 Our conclusion is therefore that the merged firm would likely experience only limited costs as a result of a partial foreclosure strategy.

- *Total foreclosure*

8.130 Our view is that, because of the essential role that Trayport plays in European utilities trading, if ICE was to engage in a total foreclosure strategy of no longer supplying Trayport's software to its existing rival venues and clearinghouses which use Trayport's software and services, this would have an impact on market participants due to their dependency on the platform (as set out in Section 7 above).

8.131 Total foreclosure of existing Trayport customers will likely have an impact on Trayport's profitability. It would directly result in the loss of the revenues currently earned from the venues and clearinghouses that Trayport forecloses. Moreover, because these venues would be forced to find other means to distribute their prices to traders, who would similarly be required to find other ways to access these venues, it is possible that in these exceptional circumstances market participants could coordinate their actions and eventually operationalise a rival system to Trayport. Although, as set out bin Section 9, we consider that such an outcome would be difficult to achieve and potentially take several years. This could result in a substantial

loss of Trayport's revenues even from those venues and clearinghouses that Trayport did not foreclose, as well as from traders.

8.132 For these reasons our view is that the merged firm would incur substantial costs if it was to engage in total foreclosure and, therefore, such a strategy was less likely. However, for the avoidance of doubt, we consider that a strategy which frustrated ICE's rivals from launching new products in competition with ICE in specific asset classes is a form of a partial foreclosure which remains at the merged entity's disposal.

- *Quantitative analysis*

8.133 The Parties submitted to us a quantitative analysis of the merged firm's incentive to foreclose ICE's rivals. As explained above, our view is that the specific features of this case mean that a quantitative analysis – particularly if it seeks to be highly detailed – will not be particularly informative of the Parties' incentives to engage in partial foreclosure. As a result, the quantitative analysis that we undertook was a high-level one that considered a number of indicative partial foreclosure scenarios in order to assess the broad magnitude of the potential costs and benefits of partial foreclosure, and served as a cross-check on our qualitative assessment. This is presented in Appendix F, in which we also set out the Parties' quantitative submission on incentives in more detail.

8.134 We observed that for each of the partial foreclosure scenarios we looked at, the results of the analysis were consistent with those of our qualitative assessment; namely that the benefits of partial foreclosure are likely to be substantially greater than the costs. As a result we found that, to the extent it is possible to place any weight on a quantitative analysis of incentives here, this provides further support for the conclusions of our qualitative assessment. However, in interpreting the results of our analysis we found that, given the difficulties inherently associated with any quantitative analysis of this Merger discussed above, and the number of assumptions we had to make, there was no single model on which we could place particular weight.

8.135 In response to our Provisional Findings, the Parties submitted that we had not properly assessed the merged firm's incentive to foreclose, and that as a result we had essentially assumed incentive based on our conclusions on ability to foreclose. More specifically, they stated that we had ignored their quantitative analysis and that our assessment was overly simplistic, resulting

in our estimates of the merged firm's incentive to foreclose being significantly overstated.[188]

8.136 We did not accept the Parties' submission that our analysis was overly simplistic and therefore that we had not properly assessed the merged firm's incentive to foreclose. As explained above, we carefully considered the weight we should place on different forms of evidence and analysis, and adopted the appropriate approach based on the facts of this case.

8.137 We also did not accept the Parties' submission that we had ignored their quantitative analysis, or that our high-level approach resulted in our estimates of the merged firm's incentive to engage in partial foreclosure being significantly overstated.[189] We discuss the Parties' quantitative analysis, and their detailed comments on our own analysis, in Appendix F. This explains that our high-level approach is not the reason why our total estimates of the gains from partial foreclosure are generally greater than those of the Parties. Rather, this difference arises because for most of the specific gains that we identified the Parties' analysis does not attribute any benefit at all, but instead sets these at £0. Specifically, the Parties' estimate of the total gains did not include any benefits from protecting ICE's existing exchange volumes, from protecting its existing OTC clearing volumes, from gaining additional OTC clearing volumes, or from gaining additional exchange volumes from the OTC uncleared segment – all areas where our view is that ICE would obtain benefits.

- *Comparison with GFI ownership*

8.138 We also 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. However, in light of our discussion of the costs and benefits of foreclosure outlined above, we consider that there are a number of important differences between the two cases that mean we cannot draw conclusions from Trayport's previous ownership.

8.139 First is the fact that, as well as execution, ICE also undertakes the clearing of trades. As set out in Appendix B, detailing ICE's revenue breakdown, ICE makes [✂] of its European utilities revenues from the provision of clearing

[188] Oxera Economic critique of the CMA's provisional findings, 5 September 2016, pages 4 & 18; ICE/Trayport response to Provisional Findings, 5 September 2016, slide 5.
[189] ICE/Trayport response to the Provisional Findings, 5 September 2006, slide 14 and Oxera Economic critique of the CMA's provisional findings, 5 September 2016, pages 25 to 28.

services than it does from execution; 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.

8.140 A second important difference is that, as shown by Table 4 in Section 7, ICE is the only execution venue or clearinghouse that has its own integrated software platform with significant front-end screen penetration among European utilities traders. This means that any partial foreclosure strategy that resulted in a reduction in Trayport's quality would more adversely affect its Trayport-dependent rivals. The fact that ICE has its own distribution channel means that it would be somewhat insulated from any such quality reduction – a protection that GFI would not have enjoyed. This also means that the benefits of foreclosing rivals are likely to be greater for ICE than they were for GFI, as this may have the additional benefit of driving adoption of ICE's own screen, from which ICE is likely to perceive a strategic advantage.

8.141 Third is the fact that, following our discussion of competition by segment in Section 7 above, as an exchange ICE's closest competitors – and therefore its main targets for partial foreclosure – are other exchanges, in contrast to GFI whose closest competitors are other brokers. Our view is that exchanges are a less important element of the Trayport platform than brokers, as demonstrated by two points. First, the fact that they account for only [✂] as much of Trayport's revenues as brokers, and, second, that Trayport has historically been a broker-focussed platform – implying that if exchanges were to leave this would be less likely to fundamentally undermine it than if brokers were to do so.[190] This means that, to the extent ICE would face some limited risks from foreclosing its closest competitors, these are likely to be smaller than those that GFI would have faced from doing the same.

8.142 More generally, revenues from Trayport represent a significantly smaller proportion of ICE's overall revenues than they did for GFI, implying it may be less focussed on protecting and growing these Trayport revenues and more focussed on using Trayport to ensure the success of its main operations.

Conclusions on incentive to foreclose

8.143 In order to assess whether the merged firm would have the incentive to totally or partially foreclose its rival trading venues and clearinghouses, we

[190] Appendix B, Table 7.

assessed the benefits and costs it would face from implementing these foreclosure strategies.

8.144 We principally undertook a qualitative assessment of the benefits to the merged firm of foreclosure, and considered that this would allow it to obtain a number of benefits. These include protecting its existing execution and clearing volumes, gaining additional volumes in these products, obtaining a foothold in products where it has little or no existing position, and gaining control of new markets and segments. This reflects our finding that there is a wide range of possible mechanisms and targets available to the Parties which they could use flexibly to profitably foreclose competing venues and clearinghouses.

8.145 We then assessed the costs of foreclosure, and found that for partial foreclosure these would be only limited. This was because retaliation against ICE by market participants would not be credible, as they would have to switch to alternatives they had previously rejected, some of which would be of reduced quality as a result of foreclosure. We also found that Trayport was unlikely to lose substantial revenues because market participants are dependent on it, alternatives are weak and past attempts to establish a rival have been unsuccessful, as demonstrated by Griffin's failed entry attempt.

8.146 In contrast, our view is that the merged firm would face substantial costs from a total foreclosure strategy from a loss of revenues, as these participants would be forced to switch to using other channels to interact with one another.

8.147 We did not consider it appropriate to place much weight on a quantitative analysis of this issue because it would require a lot of speculative assumptions about how future changes to Trayport's software would affect the evolution of trading activity for many individual products. However, we noted that our quantitative assessment also broadly confirmed our qualitative assessment of the merged entity's incentives.

8.148 In conclusion, on the basis of the above our view is that the merged entity is less likely to have the incentive to totally foreclose its rival venues or clearinghouses in European utilities trading, and there is a limit on how far the merged entity could go without provoking a market wide shift in liquidity away from Trayport. However, we consider that the merged entity would have the incentive to partially foreclose ICE's rivals.

Effects of foreclosure

8.149 In light of our findings above that the merged firm is less likely to have an incentive to engage in total foreclosure, but would have both the ability and incentive to engage in partial foreclosure, we assessed whether partial foreclosure of rival trading venues and clearinghouses would result in harm to competition in the execution and clearing of trades in the European utilities 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 in Section 10.

8.150 In response to our Provisional Findings the Parties submitted that in reaching our provisional conclusion that the transaction would give rise to an anticompetitive effect we had given disproportionate weight to the views of rival venues and clearinghouses with commercial agendas. They stated that we should have given greater weight to the views of traders, and submitted that only two or three traders appear to have expressed concerns, and that their impression is that most traders are neutral towards ICE's ownership of Trayport.[191]

8.151 Our view is that it was appropriate for us to carefully consider the views of ICE's rivals because we are mainly investigating vertical effects, and therefore the possibility that the competitiveness of these rivals, as customers of Trayport, could be directly harmed by the merged firm. It was therefore highly relevant to take their views on board, particularly in light of the complex nature of Trayport's software and in order to understand what the merged entity could do to foreclose them. Traders, in contrast, are one step removed from this relationship between Trayport and venues/clearinghouses, and are arguably less well placed to shed light on the specific actions that the merged firm could take.

8.152 In addition, we also did not accept the Parties' submission that traders generally had no concerns over its ownership of ICE. As set out above, EFET, acting on behalf of its more than 100 members and presenting itself as representing the main user community of Trayport, formally submitted that it and its members were very concerned about the transaction. Specifically, EFET stated that it expected ICE's acquisition of Trayport to have serious anticompetitive implications and that it fully supported the concerns as expressed in our Provisional Findings.[192] We also received a number of specific submissions from traders expressing their concerns.

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[191] ICE/Trayport response to Provisional Findings, 5 September 2016, slide 9.
[192] EFET submission to CMA, dated 20 September 2016.

8.153 In assessing the effects on competition of any foreclosure strategy, we noted that, 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, thereby creating the greatest opportunity to achieve the best possible deal or price for a certain asset class or product.

8.154 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 a critical role in enabling competition between trading venues and between clearinghouses, as it is the primary gateway for venues to access traders and therefore liquidity, and for traders to access venues and liquidity. We found that there are currently no credible alternative solutions to the Trayport platform 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.

8.155 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.

8.156 Considering all of the evidence in the round, we concluded that post-Merger ICE's ownership of Trayport would be used to disadvantage ICE's rivals and/or favour ICE. We considered that this would result in an immediate loss of rivalry with a longer term effect on competition, including:

(a) A loss of head-to-head and potential head-to-head competition between ICE and its rivals. ICE would not need to compete as vigorously to be the principal host of liquidity and/or clearing volumes across European utilities asset classes, and the threat of such competition would be diminished.

(b) There would be a loss of competition between ICE and its rivals in relation 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..

8.157 In the long-term, we considered that it is likely to result in liquidity remaining with ICE in asset classes where it already has a strong position and that it may ultimately result in liquidity shifting away from ICE's rivals in asset classes where it is currently weak and/or has no position. It would also increase the likelihood that ICE would take a leading position in new product markets or where innovation shifted the balance of power.

8.158 We are of the view that 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 is less pronounced.

8.159 We also concluded that the outcome of this loss of competition between ICE and its rivals is likely to directly harm traders by allowing fees for execution and clearing to increase and/or the service offered to traders to be worsened or service quality to not improve. The benefits that competition between venues and clearinghouses delivers to traders, as explained in Section 7, range 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. These benefits of competition would therefore be diminished as a result of the Merger.

Conclusion on effects

8.160 Overall, and subject to our assessment of any countervailing factors below, our view is that a partial foreclosure strategy would result in a substantial lessening of 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 effects

8.161 We examined whether the Merger would result 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.

8.162 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.

8.163 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.

8.164 Outside of our 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.

8.165 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 were a result of those third parties conflating brokers using Trayport's back-end with Trayport itself.

8.166 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).

8.167 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.

Conclusion on horizontal effects

8.168 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.

8.169 Overall, we 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.[193]

9.2 We considered whether entry and expansion by new venues or clearinghouses would mitigate any adverse effects arising from the Merger. However, in light of our conclusion that venues and, to a lesser extent, clearinghouses were dependent on the Trayport platform in order to successfully compete, we considered that ICE could use its ownership of Trayport to frustrate such entry and expansion. Therefore, we considered whether there were barriers to entry and/or expansion in the supply of software services provided by Trayport.

9.3 As discussed in Section 3 and in the 'Role of Trayport' sub-section in Section 7 above, each piece of Trayport software forms part of the integrated Trayport platform which serves a full range of market participants in European utilities trading and, as a result of its integrated format, it benefits from significant network effects. We considered the extent to which a rival could enter and/or expand as a competitor to the Trayport platform as

[193] CC2, paragraphs 5.8.3–5.8.4.

a whole, taking into account the importance of these network effects and Trayport's Closed API policy. We also assessed the ability of Trayport's rivals to enter into and/or expand in order to effectively compete with Trayport in the separate supply of:

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

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

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

The Trayport platform, network effects and the Closed API

9.4 Trayport told us that, from a software perspective, there was nothing unique about Trayport's core offering in terms of functionality, ie 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.

9.5 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[194] wishing to be available on Trayport's front-end aggregated screen for price distribution must use its BTS software.

9.6 Trayport's Closed API policy creates an interdependence between its front and back-end software. 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 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. As a result, any new entrant wishing to compete with the Trayport platform must replace all of the software products offered by Trayport in order to replicate its network effects.

[194] In contrast to broker venues which use Trayport's BTS, GV Portal allows exchanges using their own proprietary or ISV provided back-end to connect to Trading Gateway.

9.7 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 , ETS or GV portal software by venues competing in the European utilities asset classes. 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. This evidence is set out below in Appendix D.

9.8 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 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 a whole. If there was not a coordinated shift this would result in liquidity being split diminishing the associated 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.

9.9 During the course of our investigation we gathered evidence from a number of market participants regarding the possibility of a rival to the Trayport platform being established. We note that Griffin, using ICE software, attempted to establish a rival to the Trayport platform in 2011 and that its entry failed (see paragraph 7.123 and paragraphs 75 to 80 of Appendix D for further information). As set out in paragraph 7.124 and paragraphs 81 to 84 of Appendix D, discussions regarding Project Trafalgar have been held over a number of years and no significant steps have been taken towards establishing a rival.

9.10 In response to our Provisional Findings, the Parties submitted that we had failed to take into account evidence of ongoing discussions regarding Project Trafalgar and which did not involve ICE.[195] The Parties referred to rumours of market discussions between IHS Markit and a number of brokers regarding the development of an alternative to the Trayport platform. The

[195] ICE / Trayport, Response to Provisional Findings, 5 September 2016, page 25.

Parties also referred to a long-term licence taken by Tullett for CME's trading technology as evidence of a threat of entry and/or expansion.

9.11 Following the publication of our Provisional Findings, we contacted IHS Markit and other venues in order to gather evidence in light of these market rumours and in relation to the licensing agreement referred to by the Parties.

9.12 IHS Markit told us that its discussions with market participants began in June 2016 and were at a very early stage. These discussions had been put on hold as a result of a lack of expertise and, inter alia, because of an internal company restructuring that was currently underway following Markit's merger with IHS. It noted that the project may be continued in the future but that this was uncertain and it had no timing expectation.[196] IHS Markit estimated that if the project were re-commenced it would require a further 12 weeks of discussions with market participants to establish if there were demand for an alternative platform followed by a minimum of 18 months to bring the new platform to market. Each of the brokers we spoke with confirmed that their discussions with IHS Markit remained at a preliminary stage.

9.13 In response to our request for further evidence on market entry, ICAP confirmed that it had held conversations with a number of third parties over a number of years about developing a rival to the Trayport platform. It stated that given no previous attempts to establish a Trayport alternative had been successful, and all current discussions were at early stages, it did not have a high expectation of success for any specific initiative at this stage. It reiterated its previous submission that discussions were inherently slow due to the interdependencies of the Trayport software products, as part of the Trayport platform, and the requirement to coordinate across many market participants in order to shift liquidity. [✂] stated that, in its view, market entry would take approximately 3 – 5 years.[197]

9.14 We also contacted Tullett regarding their long-term licence from CME for its Elysian trading technology. Tullett confirmed that it had licensed the Elysian platform since 2008 for numerous products including but not limited to credit default swaps, corporate bonds, non-deliverable forwards and interest rate options. Its usage of the platform both internally, and supplied to customers, had increased significantly since 2008 and its long-term licence for Elysian was taken in part to mitigate the costs of this increase in licence numbers and also as a result of the prospect of increased costs deriving from the implementation of MIFID II. Tullett confirmed that it did not use nor does it have plans to use this platform for European utilities trading because

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[196] Markit hearing summary, paragraph 3.
[197] [✂] submission to the CMA on 1 September 2016.

although it believed the technology could be adapted for use in European utilities trading it stated that migration away from Trayport would require a coordinated shift in liquidity which would be very difficult to engineer (as set out in its previous submissions).[198]

9.15 In light of the above, we concluded that barriers to entry and/or expansion in establishing a rival to the Trayport platform were high and that there was no evidence of actual potential entry on a timely, likely or sufficient basis to mitigate the anticompetitive effects of the Merger.

9.16 We have set out below a summary of the evidence we gathered on barriers to entry and expansion for each of the individual software components which make up the Trayport platform. This evidence can be read in detail in Appendix D.

Supply of energy trading front-end access services to traders

9.17 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.[199]

(b) Marex told us that given Trayport's Closed API, the only way to connect to the OTC energy markets was either via a Trayport screen connecting to Trayport's Trading Gateway, or a third party screen connecting to Trayport's Trading Gateway.[200]

(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

[198] Tullett submission to the CMA on 30 August 2016.
[199] Griffin hearing summary, paragraph 22.
[200] Marex hearing summary, paragraphs 5 and 6.

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'.

9.18 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'[201] 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.

9.19 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 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 expensive 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.

9.20 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

[201] Exxeta defined 'full-fledged' direct access as access which allowed sending orders directly to the market without going through Trading Gateway.

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.

Entry costs and timeframe

9.21 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.

9.22 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 D). 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 Trayport' 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 sales 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 $[✂] million and five years trying to 'gain traction' with its energy futures trading platform CME Direct, ie $[✂] million on acquiring a software provider and $[✂] million 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.

(d) IHS Markit said a firm launching a rival to Trayport would face significant challenges. It said that doing so would depend significantly on the commitment of key market participants since a new platform would need to secure a critical mass of liquidity from the first day of launch.[202]

Conclusion

9.23 We are 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.

9.24 We note the Parties' submission 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. In any event, 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. We did not accept that any reduction in the quality of Trayport's service would make such a shift easier or more likely. It would also entail significant risks, including the risk that liquidity could be split between competing aggregating platforms resulting in worse trade pricing.

9.25 Based on our assessment above, it is our conclusion that the barriers to entry and expansion in the supply of front-end access services to energy traders are substantial.

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[202] Markit hearing summary, paragraph 5.

Supply of back-end technology to brokers and exchanges

9.26 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 D.

9.27 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 from 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. [✂].

9.28 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 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

9.29 Some third 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

9.30 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.

Conclusion

9.31 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.

Supply of access services to clearinghouses for OTC executed trades

9.32 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 trader's front-end, the broker's back-end system and the clearinghouse. This API between the front-end, 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.

9.33 Generally, third parties told us that Trayport's Closed API resulted in alternative STP link solutions not being integrated with the Trayport platform without Trayport's permission, which meant they were unable to offer traders and brokers the same level of communication and 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

9.34 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. These STP links need to be built on a per broker basis and, as such, do not provide the ready accessibility of Trayport's Clearing Link, which is already connected with each of the main brokers using its back-end software. Moreover, these STP links would not be integrated with the Trayport platform which results in their not have equivalent communication and functionality.

Conclusion

9.35 The evidence we gathered indicated that there are alternative means of establishing STP links between brokers and clearinghouses. However, these would need to be built on a per broker basis. 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 thereby from offering similar communication functionality to Trayport's Clearing Link. In light of this, and as is the case for front-end and back-end barriers to entry and expansion, we concluded that where a competitor's effectiveness depends on the ongoing cooperation of

the incumbent, ie Trayport, to provide a comparable offering this would likely undermine a competitor's ability to exert a strong and independent competitive constraint on Trayport's Clearing Link, and therefore presents a significant barrier to entry and expansion.

Conclusion on entry and expansion

9.36 On the basis of the information we have gathered, we do not consider that entry and/or expansion by a new alternative to the Trayport platform, including the supply of front-end, back-end and STP link software independently, would be timely, likely and sufficient to mitigate the SLC created by the Merger. We reached this conclusion in light of the network effects associated with the Trayport platform and as a result of Trayport's Closed API policy, which we believe make barriers to entry and expansion high in the markets concerned. A rival to the Trayport platform would need to engineer a coordinated shift of liquidity away from it, and any competitor seeking to compete in the supply of front-end, back-end and STP link software independently is significantly disadvantaged as a result of the network effects associated with the Trayport platform, and Trayport's closed system.

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:[203]

(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 as in

[203] CC2, paragraph 5.7.4.

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 for its growing data services offering and would save on procurement costs. In addition, customers would benefit from the New Agreement. The Parties did not quantify the benefits of these claimed efficiencies nor set out whether these would enhance rivalry. We also note that no third parties submitted that the Merger would result in any significant efficiencies.

10.4 In the absence of any evidence from the Parties on the significance of these claimed efficiencies and whether these would enhance rivalry, we do not consider that efficiencies would mitigate the anticompetitive effects of the Merger as a result of enhanced rivalry. We have also considered the Parties' submissions as part of our assessment of relevant customer benefits in Section 12 below.

11. Conclusions

11.1 In Section 7, we concluded that ICE's rival venues and clearinghouses were dependent on Trayport to compete effectively with ICE in European utilities asset classes, and that Trayport played an important role in enabling and promoting dynamic competition between ICE and its rivals.

11.2 In our competitive assessment, 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.

11.3 We first assessed the merged entity's ability to foreclose ICE's rivals. ICE, as the sole owner of Trayport, would have the ability to control its strategic direction, innovation priorities and levels of investment. We concluded that in the longer term ICE would have the ability to direct Trayport's strategy and commercial priorities in such a manner that would benefit ICE to the detriment of its rivals. We considered this was particularly significant in the circumstances of this case. ICE's rival venues and clearinghouses depend on Trayport as a critical input into their execution and/or clearing service offerings, and the Trayport platform is essential in order for these rivals to compete effectively with ICE. Pre-Merger Trayport was also actively engaged in strategies to promote dynamic competition between venues and clearinghouses with a view to creating new markets and/or to shifting nascent or traditionally voice brokered markets onto electronic trading models. We concluded that ICE's control of such a critical input into its rivals'

activities, including the option to stop supplying Trayport's services, clearly gave it the ability to foreclose ICE's rivals and prevent them from competing effectively.

11.4 Third parties also identified a number of mechanisms through which Trayport could weaken ICE's competitors and reduce competition as part of a foreclosure strategy. These included 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, providing ICE with access to 'soft' confidential information regarding its rivals' strategic priorities, and delaying and hampering the ability of rivals to enter new markets by delaying the listing of new products on the Trayport platform. We concluded that these mechanisms either in isolation or in combination could be used as part of a broader foreclosure strategy. We also concluded that the contractual arrangements in place between Trayport and its venue and clearinghouse customers were unlikely to sufficiently protect ICE's rivals from all such strategies.

11.5 We next considered the merged entity's incentives to foreclose. 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.

11.6 We identified five potential benefits to ICE's execution and clearing activities of using Trayport to engage in total and/or partial foreclosure of ICE's rivals. First, ICE would over time likely be able to further grow its position in products where it already has a substantial presence at the expense of its rivals. Second, total and/or partial foreclosure of ICE's rivals would help to prevent ICE's rivals from challenging to win its volumes in the future in products where it already has a strong position. Third, where there are pre-existing long-term industry trends, ICE would be able to use its control of Trayport to accelerate these and direct them in its favour. Fourth, total and/or partial foreclosure could over time help ICE to obtain volumes from its rivals in those existing products where it has little or no current position, for example German power. Fifth, ICE's control of Trayport would likely help it to gain control of new markets and segments as these emerge in future, which is particularly relevant given that dynamic competition is important in this industry, and that first-mover advantages exist. 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 found significant gains for the merged firm which would likely result from a weakening of ICE's rivals.

11.7 We turned to the costs of implementing a foreclosure strategy. In doing so, we considered whether a foreclosure strategy could be implemented by way of total or partial foreclosure. We described total foreclosure as taking the form of excluding existing venues and clearinghouses from accessing the Trayport platform in its entirety. Our view is that a total foreclosure strategy would be less likely because of the costs to the underlying Trayport business model. Such a strategy would result in the loss of revenues currently earned from venues and clearinghouses, and would weaken the network effects associated with the Trayport platform.

11.8 However, we found that the benefits of partial foreclosure would outweigh the costs. We reached this view on the basis that the costs in terms of lost revenues from Trayport's business activities would likely be small because ICE's rivals are highly dependent on Trayport, with no effective current alternatives to its services. Moreover, the fact that partial foreclosure would take the form of strategic and incremental changes over time also means that it would not fundamentally undermine the Trayport platform.

11.9 We were not persuaded by the Parties' arguments that traders would retaliate against ICE in response to a partial foreclosure strategy. If traders sought to punish ICE, there would be a cost to firms that sought to switch away from ICE's services to alternatives they had previously rejected. This is particularly so given that, as a result of foreclosure, in many cases the attractiveness of these alternatives would be diminished because ICE's rivals rely on Trayport. In essence, such retaliation would require traders to respond to a decrease in the attractiveness of ICE's rival venues and clearinghouses by switching to using them more – the opposite of the reaction we would expect.

11.10 In response to the Parties' submissions, we concluded that 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. ICE is also the only execution venue or clearinghouse with significant front-end screen penetration amongst European utilities traders meaning that any reduction in the quality of Trayport's services would more significantly affect its rivals, which rely on Trayport as a critical input to their business, and this is a protection that Trayport's previous owners would not have enjoyed. Moreover, ICE's closest

competitors – and therefore its main targets for foreclosure – are other exchanges which represent a less significant proportion of Trayport's revenues as compared to brokers. Finally, 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.

11.11 Lastly, for our incentives analysis, 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, and the number of assumptions it was necessary to make to carry out a quantitative assessment, we did not attach much weight to this evidence. However, as a cross-check, we found that all of the scenarios considered in our quantitative assessment supported our qualitative assessment.

11.12 As the final part of the vertical assessment, we considered the effects of a foreclosure strategy on competition. We 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 result in an immediate loss of rivalry that would have an impact on the terms offered to traders, including a potential increase in execution or clearing fees, a degradation in service offering or reduction in discounts, rebates and fee holidays, and fewer 'market maker' agreements offered to traders in order to retain or generate liquidity on a particular venue.

11.13 In the longer term, we 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. This may result in liquidity shifting towards ICE in asset classes where it is currently weak or not present, or may prevent ICE's rivals from shifting liquidity away from ICE in asset classes where it is currently strong. 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.

11.14 Of particular importance, we considered that a loss of competition between ICE and its rivals would have a longer term detrimental consequence on

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 also considered that under ICE ownership Trayport would no longer seek to promote competition and shape market structures in favour of its venue customers, and in competition with ICE. 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.

11.15 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. In particular, Trayport's activities may more strongly constrain ICE's offering whilst the constraint posed on Trayport by ICE in this context may be weaker. 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 found that there would likely be a reduction in competition but that on its own this was not sufficient to represent a substantial effect.

11.16 Based on an assessment in the round of all theories of harm, and taking into account the likely effects overall, we 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.

12. Remedies

12.1 Having concluded that the Merger may be expected to result in an SLC, we are required to decide what action, if any, should be taken to remedy, mitigate or prevent the SLC or any adverse effects resulting from the SLC.

12.2 Section 35(3) of the Act places a duty on the CMA to decide on three questions concerning remedial action:

(a) Should the CMA itself take action to remedy, mitigate or prevent the SLC or any adverse effect which may be expected to result from the SLC?

(b) Should the CMA recommend the taking of action by others, eg Government, regulators and/or public authorities, for the purpose of remedying, mitigating or preventing the SLC or any adverse effect which may be expected to result from the SLC?

(c) In either case, if action should be taken, what action should be taken and what is that action designed to address?

12.3 The Act requires that the CMA, when considering possible remedial action, shall 'in particular, have regard to the need to achieve as comprehensive a solution as is reasonable and practicable to the [SLC] and any adverse effects resulting from it'.[204] To fulfil this requirement, the CMA will seek remedies that are effective in addressing the SLC and its resulting adverse effects. Between two remedies that the CMA considers equally effective, it will choose that which imposes the least cost or restriction. The CMA will also seek to ensure that no remedy is disproportionate to the SLC and its adverse effects.[205] In this consideration the CMA may also have regard, in accordance with the Act,[206] to any relevant customer benefits (RCBs) arising from the Merger.

12.4 In reaching our decision on the appropriate remedy to the SLC, we have taken into account the written submissions from the Parties and third parties in response to our Remedies Notice,[207] together with the oral evidence we received during response hearings held with the Parties and a number of third parties.[208] We also separately invited, and received, views from third parties[209] on a package of behavioural remedy measures proposed by the Parties following the publication of our Remedies Notice (the Parties' Remedy Proposal).[210] We have taken these views into account in our final decision on remedies.

12.5 We set out our provisional view on remedies in a Remedies Working Paper (RWP) which we shared with the Parties in order to provide them with an opportunity to comment on our assessment. In their response to the RWP, the Parties stated that it did 'not seem productive for ICE to engage further with the CMA regarding its remedies analysis' given the 'reasoning and views expressed' in the RWP, and added that the RWP had contained 'no substantive discussion of, or linkage to, the specific SLC and partial foreclosure mechanisms which the remedies should address', without which, it was 'not possible to have a meaningful discussion' about the Parties' Remedy Proposal.[211]

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[204] Sections 35(4) of the Act.
[205] *CC8*, paragraph 1.9.
[206] Sections 35(5) of the Act.
[207] Our Remedies Notice, which set out the various remedy options we sought views on, was published on 16 August 2016, and can be found here. We received written responses to our Remedies Notice from the following third parties: Trader F, ICAP, EFET, Exchange C, Exchange D, ISV B, Nasdaq, RWE, Trader D, Engie, Exchange A, Financial Institution B, Griffin, EFETnet and Tradition.
[208] We held separate response hearings with the following third parties: ICAP, Exchange C, ISV B, RWEST and Griffin. A summary of these response hearings can be found on our case web page.
[209] We received written submissions on the Parties' Remedy Proposal from the following third parties: Broker B, EFET, Exchange C, Exchange D, ISV B, Nasdaq, RWE, Trader B, Trader C, Trader E and DONG.
[210] ICE's written submission on the Parties' Remedy Proposal can be found here.
[211] Parties' response to the RWP (27 September 2016).

12.6 The Parties also stated in their response to our RWP that their remedy proposal would be an effective and more proportionate remedy than a complete divestiture of Trayport, and that behavioural remedies had been used in past competition cases where vertical concerns had been found, but did not submit any further details or substantive evidence to support their remedy proposal.[212]

12.7 In this section, we set out the various remedy options we consulted on and consider the effectiveness and design of each remedy option in addressing the SLC and its resulting adverse effects. We then consider whether there are any RCBs arising from the Merger which we should take into account, and the issue of proportionality.

Remedy options we invited views on

12.8 In our Remedies Notice, we sought views on a number of specific remedy options while inviting parties to put forward their views in relation to any other remedies. In particular, the Remedies Notice sought views on the following options:[213]

(a) a structural remedy requiring the divestiture (either full or partial[214]) of Trayport by ICE (the Divestiture remedy);

(b) a behavioural remedy requiring the Parties to provide Trayport's products and services on fair, reasonable and non-discriminatory (FRAND) terms (the FRAND remedy); and

(c) a measure requiring Trayport to open up its API(s) and allow third party software to connect to Trayport's software platform component(s) (the Open API measure).

12.9 We subsequently invited views on the Parties' Remedy Proposal, which the Parties described as comprising three core elements: *(a)* a commitment to

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[212] Parties' response to the RWP (27 September 2016).
[213] Remedies are conventionally classified as either structural or behavioural. Structural remedies, such as divestiture or prohibition are generally one-off measures that seek to restore or maintain the competitive structure of the market through a direct change in market structure. Behavioural remedies are measures that are designed to regulate or constrain the behaviour of the merging parties with the aim of restoring the level of competition that would have been present absent the merger. In merger inquiries, the CMA will generally prefer structural remedies rather than behavioural remedies because: *(a)* structural remedies are likely to deal with an SLC and its resulting adverse effects directly and comprehensively at source in restoring rivalry; *(b)* behavioural remedies may not be effective and may create significant costly distortions in market outcomes; and *(c)* structural remedies do not normally require monitoring and enforcement once implemented. These factors mean that behavioural remedies are generally subject to higher risks than structural remedies and are therefore less likely to be effective solutions to an SLC in a merger inquiry. Source: *CC8*, paragraph 2.14.
[214] For example, a partial software divestiture remedy might involve the divestiture by ICE of only Trayport's back-end software component, or only Trayport's front-end software component to a suitable purchaser.

provide Trayport's products and services on FRAND terms (the FRAND element); *(b)* a measure aimed at providing Trayport with operational autonomy (the Separation element); and *(c)* the implementation of a confidentiality firewall between Trayport and ICE (the Firewall element).[215]

12.10 The views of third parties on the effectiveness of these remedy options have been set out in Appendix G. We provide a brief summary overview of their views below.

12.11 Of the 19 third parties who responded to our Remedies Notice and/or the Parties' Remedy Proposal, 16 told us that a full divestiture of Trayport by ICE would represent either an effective, or the most effective, remedy to the SLC. For example:

(a) Exchange C told us that full divestiture was the 'most effective' remedy, and that a 'successful divestiture' would 'maintain the competitive structure of the market' and therefore 'deal with the SLC more directly and comprehensively than any possible package of behavioural remedies'.[216]

(b) Exchange D told us that 'full divestiture' was the 'only remedy' that would 'sufficiently address the SLC and constitute a viable remedy'.[217]

(c) ICAP told us that only a full divestiture of Trayport would be effective, and that this would 'represent a comprehensive and low risk solution'.[218]

(d) EFET requested that its position should 'be understood as joint industry action' on behalf of 'over 100 member companies' organised within it, and told us that a 'full divestiture of Trayport could be the most effective remedy'.[219]

12.12 Of the 16 third party respondents who told us that complete divestiture would be effective, one third party (Griffin) also told us that an Open API measure coupled with a FRAND remedy could be an effective remedy,[220] whilst three third parties (ISV B, RWEST and Engie)[221] also told us that an Open API measure (either on its own, or in the case of Engie, combined with a partial divestiture of Trayport's front-end, Clearing Link and GV Portal) would be their preferred remedy as this could not only address the identified SLC, but

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[215] Details of the Parties' Remedy Proposal can be found here.
[216] Exchange C submission on the Parties' Remedy Proposal.
[217] Exchange D submission on the Parties' Remedy Proposal.
[218] ICAP response to the Remedies Notice.
[219] EFET submission on the Parties' Remedy Proposal.
[220] Griffin response hearing summary.
[221] ISV B response hearing summary; RWEST response to the Remedies Notice; and Engie response to the Remedies Notice.

also the wider competition concerns arising from Trayport's closed API policy.

12.13 The three respondents to our Remedies Notice and/or the Parties' Remedy Proposal who told us that a complete divestiture of Trayport would not be effective (Trader B, Trader C and EFETnet) considered that only an Open API measure either on its own, or combined with either a partial software divestiture or a FRAND remedy, would represent an effective remedy.[222]

12.14 Whilst some third parties suggested different combinations of these remedy options, no third party suggested that we should consider alternative remedies to those we consulted on in our Remedies Notice.

12.15 Throughout this section of the report we have set out the evidence we gathered from the Parties and third parties for each specific aspect of our remedies assessment.

12.16 Our assessment of remedy effectiveness and remedy design covers each of the remedy options in the following order:

(a) the Divestiture remedy;

(b) the FRAND remedy;

(c) the Parties' Remedy Proposal; and

(d) the Open API measure.

Effectiveness assessment of the Divestiture remedy

12.17 In our Remedies Notice, we invited views on a structural remedy requiring the divestiture of Trayport by ICE. We stated in our Remedies Notice that a full divestiture by ICE of the acquired business (ie Trayport) would remove at source the SLC, and therefore represent a comprehensive solution to all aspects of the identified SLC and present very few risks in terms of effectiveness.[223]

[222] Trader B submission on the Parties' Remedy Proposal; Trader C submission on the Parties' Remedy Proposal; and EFETnet response to the Remedies Notice.
[223] Remedies Notice (16 August 2016), paragraph 11.

Divestiture remedy: Parties' and third parties' views on effectiveness

12.18 In their response to our Remedies Notice, the Parties told us that in principle, the complete divestiture of Trayport would be an effective remedy given that it would 'in effect prohibit' the Merger.[224]

12.19 However, the Parties told us that a structural remedy would be disproportionate given the nature of the SLC and availability of alternative remedial action which would preserve the benefits to customers arising from ICE's ownership of Trayport. They added that the 'appropriate remedial action to address a vertical SLC of this nature was to impose a confidentiality firewall and a FRAND access remedy', which ensured that Trayport did not favour ICE.[225]

12.20 The Parties also pointed to certain UK and international competition cases where vertical concerns had been addressed by behavioural remedies, as well as to the use of FRAND measures in the financial sector to safeguard access to financial sector infrastructure and services.[226] The Parties argued that these past cases indicated that a FRAND access obligation was the 'appropriate remedy'.[227]

12.21 As mentioned above, most of the third parties who responded to our Remedies Notice and/or the Parties' Remedy Proposal considered a full divestiture of Trayport to be an effective, if not the only effective, remedy to address the SLC. The details of this evidence are set out in Appendix G.

Divestiture remedy: our assessment of effectiveness

12.22 We considered the Parties' submission that behavioural remedies are more appropriate for vertical concerns. Whilst recognising that some vertical concerns might have been addressed by behavioural remedies in certain past competition cases, as set out in our *Merger Remedies Guidelines*,[228] and consistent with previous UK merger cases, we do not consider that vertical competition concerns preclude a structural remedy in and of themselves.[229] Our remedy assessment is concerned with whether a particular remedy (whether structural or behavioural) would be effective in addressing the specific competition concerns we have identified in this particular case, and if so, whether that remedy would be proportionate.

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[224] Parties' joint response to the Remedies Notice (31 August 2016), paragraph 2.1.
[225] Parties' joint response to the Remedies Notice (31 August 2016), paragraphs 1.3, 3.1 to 3.4 and 3.9 to 3.13.
[226] Parties' joint response to the Remedies Notice (31 August 2016), paragraphs 1.3 and 3.5 to 3.8.
[227] Parties' joint response to the Remedies Notice (31 August 2016), paragraph 3.4.
[228] *CC8*, (November 2018).
[229] See *CC8*, paragraph 4.12 and EWS Railway/Marcroft Holdings (Competition Commission, report on the completed acquisition by Railway Investments Limited of Marcroft Holdings Limited, 2 September 2006).

Accordingly, we have assessed in turn which of the available remedy options would be effective in remedying the SLC identified.

12.23 We agreed with the Parties that a divestiture of the acquired Trayport business would be an effective remedy to the SLC, provided that it was well-designed and properly implemented. This is because it would unwind the Merger and address the SLC at source.

12.24 To ensure that a Divestiture remedy would achieve its intended effects, we considered the following three aspects of its design:

(a) the scope of the divestiture package, ie its composition;

(b) the identification, and availability, of suitable purchasers; and

(c) the need to ensure an effective divestiture process.

12.25 As part of this assessment, we also considered how the New Agreement should be treated under the Divestiture remedy.

- *Divestiture remedy: scope of the divestiture package*

12.26 The scope of the divestiture package would need to be appropriately configured to address the SLC; be attractive to potential purchasers; and enable the purchaser to operate effectively as an independent competitor.

12.27 We considered that a full divestiture by ICE of the acquired Trayport business would satisfy the above conditions because: *(a)* it would address the SLC at source; *(b)* a sale of the complete Trayport platform rather than a sale of its individual software components, would be more likely to be attractive to potential purchasers; and *(c)* a divestiture to a suitable purchaser would result in Trayport operating under a new owner who would act independently of ICE, and have the necessary expertise and commitment to operate effectively in this market.

12.28 We also considered whether a differently configured divestiture package might also be effective. In particular, we considered the effectiveness of a divestiture of only Trayport's back-end software, or only Trayport's front-end software, or any other software component to a suitable third party, ie a partial software divestiture.

- *Parties' and third parties' views*

12.29 In their joint response to our Remedies Notice, the Parties told us that any partial software divestiture, eg of Trayport's back-end or front-end product,

would not be a realistic option given that Trayport's software products and customer relationships were 'integral and essential to Trayport's overall business model and network'.[230] At its response hearing, ICE told us that partial divestiture, eg of a Trayport back-end or front-end product, would effectively have to involve the complete divestiture of Trayport because it was not a 'sensible option'.

12.30 During its response hearing, ICE told us that it viewed 'any' divestiture remedy (whether full or partial) as 'wholly disproportionate', and that in its view, a 'partial divestment' (eg of Trayport's back-end or front-end product) was effectively 'full divestment'. In response to our question of whether 'divestiture of one aspect of the business and not the other' could be achieved, and its impact on Trayport, Trayport told us at its response hearing that splitting up the Trayport business would not be workable, and that 'it has to go one place or the other'.

12.31 Subsequently, however, in their response to the RWP, the Parties told us that the CMA had 'failed to carry out an adequate review of the full range of potential remedy options', including 'with respect to partial divestment variants' given the CMA's provisional finding on the behavioural remedy which the Parties had proposed. The Parties however, did not provide us with details of which 'partial divestment variants' should have been explored; how they might be implemented; and why these would be effective in addressing the SLC.

12.32 We also considered the views of third parties on whether a differently configured divestiture package would be effective.

12.33 None of the third party respondents told us that a partial software divestiture remedy would be effective on its own. Three of the 19 third party respondents viewed a partial software divestiture remedy as potentially effective, but only in conjunction with an Open API measure:

(a) Engie told us that a partial software divestiture of Trayport's Trading Gateway, Joule, Clearing Link and GV Portal combined with an Open API measure, would be the 'most favourable remedy for the whole market' as it would achieve 'two main objectives at the same time': (i) it would reduce 'the risk of behaviours described under the different theories of harm'; and (ii) 'it makes sure that the opening of the APIs

[230] Parties' joint response to the Remedies Notice (31 August 2016), paragraph 2.2.

becomes a structural remedy making such opening of APIs more robust'.[231]

(b) EFETnet told us that a partial software divestiture of Trayport's Trading Gateway and Clearing Link combined with opening the API for both Trayport's front-end and back-end components would be effective. It considered that this would 'allow ICE to keep the ETS and BTS', which were 'aligned with its primary business model'. It believed that a partial divestiture of Trayport's back-end components 'would not work as ICE would have little incentive to support innovation' on the Trading Gateway or the Clearing Link, as ICE's 'success' with these Trayport components would lead to 'reduced liquidity on the primary ICE platform or clearinghouse'. It told us that the opening of Trayport's API would be 'necessary to allow Trayport prices and executed trades to be integrated into other alternative trading venues, exchanges and trader tools'.[232]

(c) ISV B told us that 'a possible remedy was a partial divestiture of Trayport's back-end' combined with 'allowing these to connect to alternative front-ends' by opening up the back-end APIs. It added that 'partial divestiture could create the kind of competition necessary to improve product innovation and functionality by increasing competitive pressure from new alternatives entering into the market'.[233]

12.34 Most third party respondents however told us that a partial software divestiture of Trayport would not be effective in addressing the SLC and that full divestiture would be necessary. We set out below some of the specific concerns raised by third parties in relation to a partial software divestiture remedy option:

(a) ICAP told us that whilst a partial software divestiture might 'appear an attractive and potentially effective remedy which could foster genuine competition in the front- and back-end technology markets […] in practice [ICE's] incentive and ability to foreclose would remain'. It also told that it was 'not clear' that Trayport's 'technical architecture' lent itself to an 'easy and effective split of the business and partial divestment', and considered that in 'any event, a partial divestment would certainly take far longer than a full divestment'. It added that given that Trayport gained 'its value from its closed and integrated structure', it might be that the 'owner of each separate part' would have a 'strong incentive to

[231] Engie response to the Remedies Notice.
[232] EFETnet response to the Remedies Notice, page 3.
[233] ISV B, response hearing summary, paragraph 4.

contract with the other owner to effectively recreate the current market structure thereby further expanding the foreclosure strategies available to ICE under this remedy'. It therefore considered that a partial divestiture remedy would be 'high risk and would also require both FRAND and open API terms to be applied'.[234]

(b) RWEST told us that a partial software divestiture of Trayport's back-end system would not on its own remedy the SLC as it would leave intact Trayport's closed back-end API. It told us that if the back-end system API was left unchanged, its owners could reproduce a front-end system 'to reinstate Trayport's dominant position'.[235] It told us that under a partial software divestiture remedy, ICE would retain the incentives and means to foreclose its rivals, since divestiture of one component would not prevent it from implementing foreclosure strategies by using another component, eg the sale of the back-end systems would still leave ICE with the opportunity to foreclose its competitors' access to the front-end aggregation services. It added that a divestiture package other than the whole of Trayport would appear to necessitate an Open API remedy for it to be effective, in order to allow the connection of competing front-end aggregation products to connect to Trayport's back-end systems and vice versa, ie for competing back-end products to connect independently to Trading Gateway.[236]

(c) Exchange C told us that under a partial software divestiture remedy involving the sale of only Trayport's back-end component, competing trading venues would 'not be protected from the range of foreclosure strategies that would be implemented through use of the Trayport front-end'. It considered that a partial divestiture of Trayport's back-end matching engine products (combined with opening the APIs of the divested component) might therefore resolve some of the competition concerns arising from the Merger, but that it would 'certainly not resolve all of them'. It therefore considered that 'partial divestiture would be insufficient to address the SLC'. It also told us that it was not clear if Trayport would remain a viable competitor under a partial divestiture remedy, and added that splitting Trayport in two might significantly reduce its commercial ability and incentives to grow and to invest and develop. It told us that it was very difficult to assess the extent to which

[234] ICAP response to the Remedies Notice, page 2.
[235] RWEST response hearing summary, paragraph 1.
[236] RWEST response to the Remedies Notice, page 1.

such a remedy would even be technically feasible, given the complex technical processes connecting the Trayport front-end and back-end.[237]

(d) Exchange D told us that foreclosure concerns 'existed with respect to both the front- and back-ends of the Trayport platform' and that therefore it was 'unlikely that a partial divestiture would solve the competition concerns outlined by the CMA'. It told us that given Trayport's interdependent feature set and its importance to the European utilities marketplace, it did not believe a partial divestiture was viable or in the best interest of the trading community.[238]

(e) ISV B told us that breaking the 'monopoly' of Trayport by splitting the company would reduce the attractiveness of the Trayport business and diminish the chance of finding a highly interested and suitable purchaser.[239]

(f) Griffin told us that given the interwoven nature of the Trayport network, a partial divestiture would be impossible without opening Trayport's APIs.[240]

12.35 Based on the third parties' views set out above, we noted that there was consensus on neither which Trayport software component should be divested, nor on where the API should be opened, eg the back-end, the front-end or both. We also noted that even the three third parties who viewed a partial divestiture remedy more favourably than the other respondents, had done so only on the basis that it would be implemented in conjunction with an Open API measure.

- *Our assessment of the scope of the divestiture package*

12.36 As stated above, we considered that: *(a)* a full divestiture of Trayport would be effective in addressing the SLC; *(b)* a sale of the whole of Trayport was more likely to be attractive to a prospective purchaser; and *(c)* full divestiture would enable the new owner to operate effectively and independently of ICE.

12.37 By contrast, we considered that these conditions were not met by a partial software divestiture remedy:

(a) We considered that there was a clear risk that a partial software divestiture would not be effective in comprehensively addressing the

[237] Exchange C response to the Remedies Notice, page 4.
[238] Exchange D response to the Remedies Notice, page 1.
[239] ISV B response to the Remedies Notice, page 3.
[240] Griffin response to the Remedies Notice, page 2.

SLC. This is because the SLC we found related to ICE's ownership of the whole Trayport platform, rather than ownership of a particular software component within the Trayport platform. Therefore, a partial software divestiture would result in ICE retaining control over a critical component of the Trayport platform, and therefore the ability to adopt partial foreclosure strategies in relation to the software component(s) it retained.

(b) Given that Trayport's software components had been developed to operate as part of an integrated platform, we considered that there was a risk that the divested Trayport software components would not be viable (or attractive to potential purchasers) on a stand-alone basis. We also considered that it was unclear that a partial software divestiture was feasible.

(c) We considered that a partial divestiture remedy would be more challenging to implement than a full divestiture remedy, and that this would ultimately result in a more complex, drawn-out and costly separation and divestiture process, both for ICE as the seller and for any potential purchaser. We had concerns in relation to the composition of such a divestiture package and the specification of this remedy, in particular in relation to which software component(s) should be divested; which Trayport management and staff should be included as part of the divestiture package; how long the separation process (if technically feasible) should last, and how market participants would be affected during this process.

12.38 We therefore considered that a partial divestiture remedy option would not on its own be effective. Accordingly, we concluded that this would be the case regardless of whether the partial software divestiture was only for Trayport's front-end, only for Trayport's back-end, only for Trayport's Clearing Link, or any other software component, as well as any other combination of Trayport's software components. We concluded that only a full divestiture of Trayport would represent an effective divestiture package.

12.39 We also explored whether a package of remedies comprising both a partial divestiture remedy and an Open API measure would be effective, as suggested by a number of third party respondents. We considered that the intended effects of such a package of remedies would not be substantially different from the intended effects of an Open API measure, in that in each case, its effectiveness would be dependent on whether third party front-end or back-end software providers would be likely to emerge in a sufficiently timely manner, and if so, whether it would be likely to impose a sufficient competitive constraint on the Trayport components retained by ICE, such

that it would address the SLC and its resulting adverse effects. We therefore assessed the effectiveness of such a package of remedies when we consider the effectiveness of an Open API measure later in this section.

- *Divestiture remedy: identification, and availability, of suitable purchasers*

12.40 In order to ensure that the Divestiture remedy would achieve its intended effects, a divestiture would need to be made to a purchaser who satisfied the following suitability criteria, based on our *Merger Remedies Guidelines*:[241]

(a) *Independence:* the purchaser should have no significant connection to the Parties that may compromise the purchaser's incentives to compete independently from ICE, eg an equity interest, shared directors, or continuing financial assistance.

(b) *Capability:* the purchaser must have access to appropriate financial resources, expertise and assets to enable the divested business to be an effective competitor in the market. This access should be sufficient to enable the divestiture package to continue to develop as an effective competitor.

(c) *Commitment to the relevant market:* the purchaser should have an appropriate business plan and objectives for competing in the relevant market.

(d) *Absence of competitive or regulatory concerns:* divestiture to the purchaser should not create a realistic prospect of further competition or regulatory concerns.

12.41 We first set out the views of the Parties and third parties in relation to the issue of purchaser suitability, before setting out our views on how we should apply the purchaser suitability criteria in this case, and our view on the likelihood that a suitable purchaser would be found.

- *Parties' and third parties' views*

12.42 ICE told us at its response hearing that following the logic of our Provisional Findings, other operators of exchanges and clearinghouses, brokers, trading firms (including utilities) and market data providers (such as Bloomberg, Reuters or Markit, which all ran OTC markets) would also raise similar competition concerns, given their potential to have conflicts of interest arising from their ownership of Trayport. Trayport added that an ISV would

[241] *CC8* , paragraph 3.15.

raise horizontal competition concerns as a potential purchaser. The Parties told us that it was likely therefore that the eventual purchaser could only be a private equity firm.[242]

12.43 The Parties told us that a private equity buyer would present a 'downside', given that a private equity buyer would: *(a)* likely have a relatively short three- to five-year (or at most, up to a 10-year) investment time horizon in contrast to Trayport being a permanent part of ICE; and *(b)* be unlikely to provide Trayport with the same level of industry expertise, support and investment as would be available under ICE ownership.[243]

12.44 ICE told us at its response hearing that in relation to whether a consortium of market participants might be a suitable purchaser, this would not be feasible as it would take time to bring such a consortium together, and to achieve the right balance to avoid any potential conflicts of interest (a failure to represent every market participant in the consortium would lead those not in the consortium to suffer the same threat of harm the CMA alleged with ICE).

12.45 Many third parties believed that an exchange would not be a suitable purchaser of Trayport, citing that this could raise similar competition concerns as the current Merger. However, there was more mixed evidence in relation to the suitability of other market participants.

12.46 Some third party respondents similarly submitted that neither brokers nor trading firms would be suitable purchasers for the Trayport business, since they raised the risk of foreclosure to rival brokers and trading firms, respectively. For example, ISV B, referring to market participants, told us that there was a 'natural conflict of interest if such an aggregation service' was 'provided by a single entity'.[244]

12.47 In contrast, other third parties submitted that a single brokerage or trading firm could be a suitable purchaser:

(a) Brokers were considered suitable by some given that they were 'not active' as central clearinghouses,[245] and their 'incentives or means' to foreclose would not be as 'strong'.[246]

(b) Similarly, trading firms were considered potential suitable purchasers by some given that they had a 'vested interest in promoting open

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[242] Parties' joint response to the Remedies Notice (31 August 2016), paragraph 2.8.
[243] Parties' joint response to the Remedies Notice (31 August 2016), paragraphs 2.9 and 2.10.
[244] ISV B response to the Remedies Notice, page 1.
[245] Exchange C response to the Remedies Notice, page 2.
[246] ICAP response to the Remedies Notice, page 1.

competition and innovation between venues',[247] provided that suitable ring-fencing arrangements were also put in place between Trayport and its primary trading operations.

12.48 Some third parties suggested that a sale to a consortium of brokers and/or traders raised fewer issues than a sale to an exchange. For example, Exchange C told us that it considered a consortium of brokers and traders 'with the right balance' to be suitable, and Exchange D also believed that a consortium of market participants could be a potential satisfactory purchaser.[248]

12.49 Some third parties told us that ISVs or financial investors, such as private equity firms, would be more appropriate and less risky potential purchasers. For example:

(a) EFET told us that ISVs or financial/private equity firms that would not pose any threat to Trayport running in a neutral way could be suitable purchasers.[249]

(b) Exchange C told us that given Trayport's 'profitability and continued growth', a number of parties, eg financial investors or IT companies, 'would be interested in purchasing Trayport and that such a purchase would be an attractive prospect for straightforward commercial, rather than strategic or potentially anti-competitive, reasons'.[250]

12.50 ICAP told us that 'major trading venue and data provision businesses' [✂] would 'attract ownership concerns comparable to, but probably greater than, brokers'. It told us that 'these types of potential owners might currently lack market presence in European energy but would still have potential incentives to misuse their ownership position'. It added that 'price reporting agencies might also be suitable purchasers, subject to addressing any concerns over their potential treatment of data'.[251]

12.51 An additional point of concern submitted by a third party (Exchange C) was that sale to a purchaser less committed or capable of maintaining Trayport's existing services, and to developing, expanding and improving its existing

[247] RWEST response to the Remedies Notice, page 1.
[248] Exchange C response to the Remedies Notice, page 2, and Exchange D response to the Remedies Notice, page 1.
[249] EFET response to the Remedies Notice, page 2.
[250] Exchange C response to the Remedies Notice, page 2.
[251] ICAP response to the Remedies Notice, page 1.

and new services, 'could have the same harmful consequences as that of ownership by ICE'.[252]

- *Our assessment of suitable purchasers*

12.52 We noted the Parties' views that no market participants would be suitable as a purchaser, and the general consensus among third party respondents in relation to the unsuitability of an operator of an exchange as a purchaser of Trayport.

12.53 However, our SLC decision is specific to the facts of this case, and therefore it does not follow that our concerns will necessarily extend to other market participants as purchasers, eg trading firms and brokers or even other operators of exchanges and/or clearinghouses. In particular, the universe of exchanges, brokers, trading firms and ISVs extends well beyond those that currently operate in European utilities trading. At this stage, and without further evidence or competitive assessment with regard to their particular circumstances, we would not rule out any of these buyers.

12.54 We will consider the suitability of each potential purchaser on its own merits and on a case-by-case basis, and against our purchaser suitability criteria set out in paragraph 12.24 above. In response to the Parties' concerns in relation to an acquisition of Trayport by a private equity buyer, we note that our suitability criteria would cover a purchaser's capability and commitment to the market, and would involve assessing a potential purchaser's business plan and strategy going forward for the Trayport business. We would therefore carefully consider the suitability of a private equity buyer on a case-by-case basis.

12.55 In relation to whether a suitable purchaser could be found, we considered that the risk of not finding a suitable purchaser was low based on:

(a) the level of interest from potential purchasers in the previous (and relatively recent) Trayport sale process; and

(b) the attractiveness of Trayport's fundamentals as an investment proposition, in particular its market position and business model. In relation to its current trading performance, Trayport told us that its financial performance had been better than expected.

[252] Exchange C response to the Remedies Notice, page 2.

- *Divestiture remedy: ensuring an effective divestiture process*

12.56 An effective divestiture process requires an assessment of:

(a) the appropriate timeframe for divestiture to complete (the Divestiture Period);

(b) the extent of any interim measures required during the sale process, eg to ensure that Trayport is maintained and preserved during the course of the process; and

(c) whether there is a need to appoint an external and independent trustee to carry out the divestiture process (the Divestiture Trustee) to mitigate the risk that the sale process does not complete within the agreed Divestiture Period.

- *Parties' and third parties' views*

12.57 ICE did not put forward its own views in relation to the issues concerning the divestiture process, although Trayport suggested at its response hearing that (if a divestiture were required), it could be sold within six to 12 months.

12.58 Trayport told us that if ICE were required to divest Trayport, then a further six months of uncertainty might make it a challenge to keep the team together, but considered that this was probably manageable. However, it added that any extension to the process would represent a large risk of people departing.

12.59 In their response to our Remedies Notice, the Parties told us that there would be 'disruption and potential for harm to the Trayport business from a further sale process', and that these processes were 'a significant distraction and burden' for Trayport's management, with ICE's acquisition of Trayport already the second sale process Trayport had undergone in two years.[253]

12.60 Third party estimates for the appropriate Divestiture Period ranged from three to 12 months. In relation to the three-month Divestiture Period, Exchange D told us that the divestiture process 'could be completed on an expedited basis in as little as 3-6 months', and that the 'structure of the divestiture should be relatively straightforward' given that Trayport was a 'standalone business and entity'. It added that 'given the recent sales

[253] Parties' joint response to the Remedies Notice (31 August 2016), paragraph 2.7.

processes concerning Trayport, it should be easier to identify potential acquirers, many of whom may already be familiar with the asset'.[254]

12.61 Exchange C told us that 'retention of staff within Trayport during the sales process would be important', but added that 'in spite of being under a sales process for four years', it did not 'appear to be likely that key staff' would leave if there was another sales process.[255]

12.62 In relation to whether an independent monitor should be appointed to oversee the divestiture process, some of the third party respondents told us that in addition to the current periodic monitoring responsibilities of the independent and external monitor appointed under ICE's Order (the Monitoring Trustee), there should be a role for the Monitoring Trustee to ensure that the divestiture process was effective. This role would include safeguarding against ICE securing preferential terms from Trayport as part of the divestiture process. Others told us that a Divestiture Trustee should be appointed early in the process to safeguard against the risk that ICE might delay the sale process and extend the uncertainty faced by Trayport and its venue customers, to its advantage.

- *Our assessment of ensuring an effective divestiture process*

12.63 Regarding the Divestiture Period, we concluded that a period of [✂] would be appropriate for ICE to complete the divestiture of Trayport to a suitable purchaser. In deciding this, we took the following considerations into account:

(a) our view that there would be sufficient interest from potential purchasers of Trayport based on the level of interest from potential purchasers during its last sale process and Trayport's attractive investment fundamentals (see paragraph 12.55);

(b) limited separation issues given the limited integration that had taken place to date;

(c) the need to minimise any further disruption or uncertainty to Trayport and its customers arising from a protracted divestiture process; and

(d) the minimal developments in Trayport's business since its last sale process which would enable the Parties to commence a sale process

[254] Exchange D response to the Remedies Notice, page 1.
[255] Exchange C, summary of response hearing, paragraph 10.

relatively quickly with the same, or similar, marketing information and documentation prepared for Trayport's last sale process.

12.64 In relation to whether additional safeguards should be put in place to ensure that the Trayport business did not deteriorate during a potential sale process, we concluded that the obligations on ICE under the current Order, including the continued appointment of the Monitoring Trustee, should continue to apply under any divestiture order or divestiture undertakings accepted by the CMA from ICE, until the legal completion of the divestiture.

12.65 However, we concluded that the Monitoring Trustee's current reporting obligations should be expanded to provide the CMA with regular updates on the progress of the divestiture process, which would highlight: *(a)* the progress made by ICE against an agreed divestiture process timetable; *(b)* details of any issues arising during the divestiture process which the Monitoring Trustee considers might prejudice the intended and effective outcome of the divestiture process, or cause considerable delay to the completion of the divestiture within the agreed timescales. We would expect the Monitoring Trustee to act in this capacity once the CMA issues any divestiture order or accepts divestiture undertakings from ICE, until the legal completion of the divestiture.

12.66 We also concluded that a Divestiture Trustee should be appointed if we reasonably believe that there is a risk that the divestiture process would be delayed or fail to complete within the agreed timescales. This requirement to appoint a Divestiture Trustee under these circumstances should be incorporated in any divestiture order or undertaking.

12.67 We finally concluded that this divestiture should be accompanied by obligations on ICE not to re-acquire Trayport (in whole or in part) for a period of 10 years from the completion date of ICE's divestiture of Trayport.

- *Divestiture remedy: treatment of the New Agreement*

12.68 We considered the treatment of the New Agreement under a Divestiture remedy.

- *Parties' and third parties' views*

12.69 The Parties told us that the New Agreement would allow: *(a)* customers to benefit from an enhanced distribution of ICE contracts; and *(b)* Trayport to benefit from ICE's acceptance of Trayport's normal commercial terms (eg paying for connectivity). The Parties added that further delay or uncertainty in relation to the implementation of the New Agreement would be damaging

to Trayport and its customers, and continue the 'distortion of normal and fair competition between ICE and EEX'.[256]

12.70 Some third parties believed that the New Agreement was specific to the Merger, and should therefore be terminated, whilst others believed that the new owner of Trayport should be given the option to review and renegotiate the terms of the New Agreement. None of the third parties told us that the New Agreement should be implemented whilst Trayport was under ICE's ownership. We set out some of these views below:

(a) Exchange A told us that the purchaser of Trayport should have the ability to reassess the New Agreement, to decide whether the New Agreement would implement any anti-competitive measures or otherwise prejudice the purchaser.[257]

(b) Exchange C told us that the new owner of Trayport should be given the commercial flexibility to determine what agreements it would be entering into, independent of possible strategic and anti-competitive reasons for the New Agreement having been signed.[258]

(c) ICAP told us that there was considerable doubt as to whether this agreement would have been signed in its current form absent the transaction and the safest, lowest risk course of action was that it should be cancelled.[259]

(d) Griffin told us that [✂].[260]

- *Our assessment of the treatment of the New Agreement*

12.71 As set out in our assessment of the counterfactual in Section 6, we concluded that it was not sufficiently certain that the New Agreement would have been entered into by ICE and Trayport on the same terms absent the Merger. Accordingly, it follows that it is unclear whether under alternative ownership the same agreement would have been signed.

12.72 Given this uncertainty, we concluded that it would be appropriate for any new owner of Trayport to decide whether to accept or reject the terms of the New Agreement entered into whilst Trayport was under ICE ownership.

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[256] Parties' joint response to the Remedies Notice (31 August 2016), paragraphs 2.13 to 2.15.
[257] Exchange A response to the Remedies Notice, paragraph 2.6.
[258] Exchange C response to the Remedies Notice, page 3.
[259] ICAP response to the Remedies Notice, page 3.
[260] Griffin response to the Remedies Notice, page 2.

12.73 In order to provide the eventual purchaser of Trayport under this remedy with sufficient flexibility to make this decision, we considered that the New Agreement should be fully unwound thereby giving the new owner of Trayport the choice as to whether to negotiate (or not) an agreement with ICE either as part of the divestiture process, or in the future.

12.74 For the avoidance of doubt, following the termination of the New Agreement, ICE would be under no obligation under this remedy to enter into negotiations with the new owner of Trayport in relation to this agreement.

Divestiture remedy: conclusions on effectiveness

12.75 We concluded that a complete divestiture of Trayport to a suitable purchaser would be achievable and effective in addressing the SLC. We would expect this to be a timely and low risk solution to the SLC we have identified, with no future monitoring requirements on the CMA or others.

Effectiveness assessment of the FRAND remedy

12.76 In our Remedies Notice, we sought views on a behavioural remedy requiring Trayport to grant all its customers access to Trayport's products and services on FRAND terms.[261]

12.77 In this sub-section, we consider the effectiveness of a stand-alone FRAND remedy, in relation to which we invited views in our Remedies Notice. Our discussion of the Parties' more detailed proposals in relation to giving FRAND commitments as part of the Parties' Remedy Proposal, is considered later in this section when we examine the effectiveness of the Parties' Remedy Proposal, ie the FRAND element together with the Separation and Firewall elements.

FRAND remedy: Parties' and third parties' views on overall effectiveness

12.78 The Parties told us that the 'partial vertical foreclosure concern that ICE's competitors in European utilities trading and/or clearing markets might be competitively disadvantaged due to impaired access to Trayport compared to ICE', related to services that Trayport would supply to ICE on 'the same or similar terms'. Therefore, they considered that it was in principle, a situation where a FRAND access remedy was 'suitable'.[262]

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[261] Remedies Notice (16 August 2016), paragraph 15.
[262] Parties' joint response to the Remedies Notice (31 August 2016), paragraphs 3.1 and 3.3.

12.79 In relation to the risks associated with a FRAND remedy, the Parties told us that the CMA had 'overlooked the substantial use of FRAND access mechanisms in financial markets[263] and in competition remedies by senior enforcement agencies', and that these risks could 'all be addressed through appropriate specification of Trayport's service obligations'.[264]

12.80 Based on the third party responses we received to our Remedies Notice, none of the third party respondents told us that a FRAND remedy would be effective as a stand-alone remedy, with each suggesting that either a FRAND remedy was ultimately flawed and could not be effective in addressing the SLC or that a FRAND remedy would not be effective on its own and therefore should form part of a wider package of remedies involving the opening of Trayport's APIs or a partial software divestiture remedy. Many of these third party concerns centred on the difficulties associated with specifying FRAND terms sufficiently comprehensively for Trayport's products and services such that it would mitigate the risks of remedy circumvention, as well as the challenges associated with monitoring remedy compliance and enforcement (the details of their evidence are set out in Appendix G).

FRAND remedy: our assessment of effectiveness

12.81 In order to determine whether a FRAND remedy might be effective in remedying the SLC identified, we set out below our considerations on the following factors: specification, distortion and circumvention risks; and monitoring and enforcement.[265]

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[263] The Parties pointed to several examples where FRAND measures were used within the financial sector, including for example: *(a)* in relation to the FCA's benchmarking rules the FCA stated that: 'Introducing a FRAND pricing obligation rule will be an effective instrument to ensure that benchmark administrators' terms of access remain fair'; *(b)* the references to FRAND terms throughout the FCA Handbook, eg that 'recognised investment exchanges' must have objective, non-discriminatory access criteria, or the 'FRAND style requirements' in relation to the publication of pre- and post-trade information; and *(c)* the requirement for payment systems operators to provide access on a FRAND basis. Source: Parties' joint response to the Remedies Notice (31 August 2016), paragraph 1.3 and paragraphs 3.5 to 3.13.

[264] Parties' joint response to the Remedies Notice (31 August 2016), paragraph 1.3*(b)*.

[265] The risks associated with behavioural remedies are identified in CC8, paragraph 4.2:
(a) Specification risks: these risks arise if the form of conduct required to address the SLC or its adverse effects cannot be specified with sufficient clarity to provide an effective basis for monitoring and compliance.
(b) Circumvention risks: as behavioural remedies generally do not deal with the source of an SLC, it is possible that other adverse forms of behaviour may arise if particular forms of behaviour are restricted. To avoid or reduce these risks, behavioural measures need to deal with all the likely substantial forms in which enhanced market power may be applied. In practice this may not be feasible or may make the behavioural measures too complex to monitor.
(c) Distortion risks: these are risks that behavioural remedies may create market distortions that reduce the effectiveness of these measures and/or increase their costs.
(d) Monitoring and enforcement risks: even clearly specified remedies may be subject to significant risks of ineffective monitoring and enforcement.

- *FRAND remedy: specification, distortion and circumvention risks*

12.82 We considered whether FRAND terms could be specified with sufficient clarity to provide an effective remedy, as well as their distortion and circumvention risks.

- *Parties' and third parties' views*

12.83 In their response to our Remedies Notice, the Parties told us that it was 'feasible to identify the aspects of Trayport's provision of software services that must be safeguarded to avoid an SLC' and ensure that there was not a 'substantial impact on the ability of ICE's rivals to compete', and to 'benchmark and monitor Trayport's performance in this regard against its pre-acquisition behaviour and the service provided in future to ICE'. The Parties added that the 'nature of the software services supplied by Trayport' was 'not an obstacle to implementing an effective behavioural remedy based on FRAND access'.[266]

12.84 In relation to third party views on these risks, some third parties submitted that FRAND terms would be too difficult to specify comprehensively to ensure that the remedy would be effective both now and in the future. For example:

(a) ICAP told us that 'it would be implausible to believe that all potential current and future services, products and access rights could be definitively listed and protected contractually'.[267]

(b) EFET told us that it would be too complex to 'list and define all the contractual elements that Trayport should implement to make its full contractual package fair and reasonable'.[268]

(c) Exchange C told us that a FRAND remedy would need to be in place for many years and would need to be updated on a regular basis to take account of evolving technology.[269]

(d) Exchange A told us that behavioural remedies, such as a FRAND remedy, might address 'particular issues identified at the point of their

[266] Parties' joint response to the Remedies Notice (31 August 2016), paragraphs 3.14 and 3.15.
[267] ICAP response to the Remedies Notice, page 3.
[268] EFET response to the Remedies Notice, page 4.
[269] Exchange C response hearing summary, paragraph 13*(f)*.

imposition, but may be superseded by new issues or practically circumvented in manner of implementation or form'.[270]

(e) Tradition told us that the FRAND remedy proposal was 'open to circumvention'. It considered that it 'would be practically impossible to assess or quantify (and thereby impossible to enforce) any commitment by ICE to grant customers access to its products and services' on FRAND terms.[271]

12.85 Other third party respondents asserted that there was a wide range of foreclosure strategies available that made designing a FRAND remedy challenging. For example:

(a) Exchange C told us that 'designing FRAND terms to cover all of the substantial ways through which foreclosure could arise' was 'simply not feasible', and that 'designing FRAND terms to cover all products to which foreclosure strategies could be applied […] would be impossible'.[272]

(b) Nasdaq told us that given the 'complexity of a technical gateway and related services', there was a 'wide range of ways' by which ICE could 'circumvent any contractual provisions without risk of prosecution', eg 'slow service' which would be very difficult to monitor.[273]

- *Our assessment of specification, distortion and circumvention risks*

12.86 We considered that Trayport's products and services were particularly unsuitable for an effective FRAND remedy. In the dynamic technology sector in which Trayport operates, where Trayport's customers have different development requirements and needs, and where products and services could change and evolve significantly, FRAND terms would be difficult, if not impossible, to specify in order to cover all eventualities, to apply in practice and to remain relevant over time. This, in our view, gives rise to greater scope for circumvention, as over time, these market changes could result in a FRAND remedy becoming less effective.

12.87 Based on the above, we also considered that this general unsuitability of FRAND terms to Trayport's products and services, as well as to its customers, could give rise to market distortion risks, where the application of FRAND terms restricts Trayport's ability to prioritise the needs of certain

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[270] Exchange A response to the Remedies Notice, paragraph 2.3.
[271] Tradition response to the Remedies Notice, page 1.
[272] Exchange C response to the Remedies Notice, page 6.
[273] Nasdaq response to the Remedies Notice, page 1.

customers where there is a genuine need to do so. For example, given Trayport's finite development and financial resources, FRAND terms might limit the development resource available to meet a particular customer's bespoke needs.

12.88 In relation to whether FRAND terms could be practically applied with no scope for circumvention, we considered that the merged entity would have wide scope to circumvent a FRAND remedy as it would always have the ability to point towards the differences in customer situations to discriminate incrementally, eg because a customer was a deployed service customer as opposed to a hosted customer.

12.89 Given the different needs and development requirements of Trayport's customers, we also considered that general FRAND principles concerning Trayport being venue-neutral and not giving ICE any preferential treatment, would in practice be difficult, if not impossible, to apply in practice. We considered that there would be a broad scope for the merged entity to treat customers differently by citing customer-specific differences, whilst still remaining compliant with FRAND terms. This would also undermine the effectiveness of any monitoring and enforcement measures that form part of any FRAND remedy.

12.90 Based on the above, given the dynamic nature of Trayport's market; the different and evolving needs of customers; its complex products and services, we concluded that a FRAND remedy could not be specified so as to: *(a)* cover all of the possible partial foreclosure mechanisms we have identified; *(b)* cater for all possible eventualities (including future events); and *(c)* address dynamic competition concerns.

12.91 We therefore concluded that the specification and circumvention risks associated with a FRAND remedy were very high, and that there was scope for market distortions to arise through its application to the services Trayport provides.

- *FRAND remedy: monitoring and enforcement risks*

12.92 Our *Merger Remedies Guidelines* state that even if the risks mentioned above could be overcome, a behavioural remedy may be subject to the risks of ineffective monitoring and enforcement. This may be due to a variety of causes, eg asymmetry of information between the monitoring agency and

the business concerned and the long timescale of enforcement relative to a rapidly moving market.[274]

12.93 We set out the views of third parties in relation to the monitoring and enforcement risks associated with a FRAND remedy below. We set out the Parties' proposal on this issue when we discuss the Parties' Remedies Proposal later in this section.

- *Third parties' views*

12.94 In their responses to our Remedies Notice, the majority of third parties told us that under a FRAND remedy, the risks of ineffective monitoring and enforcement were high (see also Appendix G).

12.95 Some third parties told us that it would not be possible for Trayport's customers to tell if they were being treated on FRAND terms, and that even if an independent monitoring body were put in place, it would be extremely resource-intensive and very difficult for it to determine whether any differential treatment was justified or in breach of FRAND terms. For example:

(a) Financial Institution B told us that it 'may not be apparent to market participants' whether they were being granted access on FRAND terms 'given the lack of visibility regarding the commercial negotiations and access arrangements of other market participants'.[275]

(b) EFET told us that it considered that 'any contractual measures' encompassed a 'rather broad scope of issues', and did not see 'any efficient way to detect or deter each instance of Trayport contractual non-compliance in the future, even with an appointed trustee'.[276]

(c) Tradition told us that given the broad variety of services and the corresponding number of service permutations, as well as differences in levels of usage of such services, it would be almost impossible to monitor Trayport's compliance with a FRAND remedy. It added that the 'lack of transparency of contractual and commercial terms secured by other clients' would also make 'any assessment even harder to make, police and enforce', and that any FRAND terms would be 'almost

[274] *CC8* (November 2008), paragraph 4.2.
[275] Financial Institution B response to the Remedies Notice, page 1.
[276] EFET response to the Remedies Notice, page 5.

impossible to enforce and open to a speculative and subjective interpretation between ICE/Trayport and clients'.[277]

(d) Exchange D told us that without 'full access to information', it would be 'very difficult for market participants on an ongoing basis to ensure that they are provided FRAND access terms, especially with respect to new products or services offered by Trayport and prioritisation of resources'. In addition, it told us that 'given the diversity of customers and products', it was 'not reasonable for all potential contractual possibilities to be listed', and therefore there would be 'no basis upon which to measure equal access and prioritisation'.[278]

- *Our assessment of monitoring and enforcement risks*

12.96 In our view, given the information asymmetry between Trayport and its customers (or an independent monitor), the complexity of the products and customers' needs which provide the scope for Trayport to justify differential treatment on individual customer circumstances, it would be extremely difficult for customers to know if, and when, they have been unfairly treated, and this would cover both price and non-price factors. For example, we considered that Trayport would have the ability to cite the differences in a particular customer's circumstances relative to others, which is a feature of the markets in which the Parties operate, to explain any differential treatment, or cite internal technical or resourcing issues to explain any particular action, information which would not be available to the customer making the complaint. Even if this type of information was made available to a customer or an independent monitor, we considered that it would be very difficult to prove that the contested action by Trayport was in breach of any FRAND terms.

12.97 We also considered that these difficulties in establishing that a breach of FRAND terms had occurred would be exacerbated in instances of dynamic competition where certain partial foreclosure mechanisms might be less obvious or incremental in nature. In particular, we considered that this issue would be more likely to arise where the new products were more complex and therefore required Trayport to carry out some development work. For example, this would be the case when rivals were to launch products for the first time – eg their first power product on Trayport's STP link – as opposed

[277] Tradition response to the Remedies Notice, page 1.
[278] Exchange D response to the Remedies Notice, page 3.

to products broadly similar to those already listed – eg a power product in a new region.

12.98 In their response to the RWP, the Parties told us that in relation to 'detection risk', the CMA had not 'followed up' on the Parties' offer of 'the possibility of appointing a monitoring trustee', which they told us they had raised during their response hearing. However, we note that in our RWP, we had assessed the monitoring and enforcement risks associated with a FRAND remedy in this case, including whether these risks could be effectively addressed by an external monitor. Whilst we had provisionally concluded in our RWP that this would not be possible, the Parties did not provide us with further evidence to challenge this provisional conclusion concerning the effectiveness of an external monitor.

12.99 In relation to enforcement issues, we considered that the difficulties of monitoring the remedy we mentioned above would be likely to result in a potentially complex, costly and time-consuming process for the parties involved, and deter customers from making a complaint for breaches by Trayport. In addition, we considered that for any harm suffered by customers as a result of a breach, other than harm suffered arising from unfair pricing, it would be difficult, or impossible to quantify the harm caused, eg loss of future potential revenues.

12.100 We therefore concluded that a FRAND remedy was not capable of effective monitoring, including by an external monitor, or enforcement.

FRAND remedy: conclusions on effectiveness

12.101 Based on our assessment above, we concluded that a FRAND remedy on its own would not be effective.

Effectiveness assessment of the Parties' Remedy Proposal

12.102 Following the publication of our Remedies Notice, the Parties submitted their own remedy proposal, which comprised the following key elements:

(a) *FRAND element:* a commitment to provide Trayport products and services on FRAND terms;

(b) *Separation element:* measures to ensure operational separation of Trayport from ICE; and

(c) *Firewall element:* the implementation of a confidentiality firewall between ICE and Trayport.

12.103 The Parties also submitted their proposals in relation to how this package of remedies would be monitored and enforced.

12.104 We subsequently invited views from third parties on the Parties' Remedy Proposal, and we refer to their comments under the relevant issues when we turn to assess the effectiveness of this package of remedies. We noted that of the nine third parties who commented on the Parties' Remedy Proposal, no third party considered this to be an effective remedy package (see Appendix H for details of this evidence).

12.105 We briefly describe each element below and the Parties' views on remedy effectiveness, including the Parties' proposal on how the package of remedies might be monitored and enforced.

Parties' Remedy Proposal: FRAND element overview

12.106 The Parties told us that under the Parties' Remedy Proposal, 'formal commitments' would be in place to 'reassure customers' that Trayport would 'indeed continue to support them as currently'.[279] The Parties submitted a proposal for the FRAND element, which we summarise below (further details are set out in Appendix H):[280]

(a) *Scope:* for a period of 10 years, FRAND principles would apply to Trayport's front-end, back-end and STP link products, and their 'successor' products (the Key Products) for use in European utilities trading and clearing, where European utilities was defined as European gas and power, emissions and coal.

(b) *FRAND principles:* a 'legally enforceable commitment' for Trayport to continue to license, improve and support its Key Products, on a 'venue-neutral basis and in particular, not to give ICE preferential treatment such that it could obtain unfair competitive advantage over competitors'.

(c) *Trayport obligations and standards (including the services Trayport would provide):* a full list of Trayport's obligations and standards are set out in Appendix H, which includes obligations on Trayport to: (i) maintain/improve the performance of the Key Products in relation to price dissemination, order routing and mapping new products; (ii) make Key Product upgrades available to all customers at 'substantially the same time'; (iii) devote resources to the research and development and maintenance of the Key Products equivalent to the average of the prior

[279] Parties' joint response to the Remedies Notice (31 August 2016), paragraph 2.7.
[280] Parties' supplemental submission on the Parties' Remedy Proposal (9 September 2016).

two years; and (iv) make 'commercially reasonable efforts to respond to customer requests with respect to development of Key Products, consistent with Trayport's past practice'.

(d) *Innovation:* Trayport's Chief Operating Officer (COO) would be responsible for producing an 'annual innovation plan' for the Key Products, in consultation with a 'customer committee' representative of its customer base. A new and separate Trayport Board (New Board) (with a majority comprised of non-ICE affiliated directors) would be responsible for approving the 'annual innovation plan'.[281]

Parties' Remedy Proposal: monitoring and enforcement procedures overview

12.107 We summarise below the Parties' proposal in relation to monitoring and compliance under the Parties Remedy Proposal (see also Appendix H):

(a) *Monitoring:* a quarterly report would be prepared by Trayport's COO on dealings with Key Product customers using criteria set by the New Board designed to ensure that the provisions of these commitments are adhered to. The New Board would issue a compliance report annually as part of Trayport's published Annual Report that Trayport had complied with these commitments.

(b) *Complaints procedure:* a complaints procedure substantially similar to the procedures operated by IFEU and ICE Benchmarking Administration would be put in place to hear disputes in connection with compliance with Trayport's remedy obligations.

(c) *Dispute resolution mechanism:* a binding arbitration dispute resolution mechanism would be put in place to resolve within a reasonable period any dispute which was not addressed via the complaints procedure.

12.108 At its response hearing, Trayport added that such a complaints procedure would likely have some 'bite'. We have, however, not received any further details from the Parties on how any penalties or compensation might be determined for a breach under their remedy proposal.

12.109 In relation to the costs associated with its proposed complaints procedure (including the costs of any complaints commissioner appointed for this purpose), ICE told us at its response hearing that these costs would not

[281] Note that the proposal under 'Innovation' was originally listed under the Parties' description of the Separation element. It has been moved under our description on the FRAND element remedy for the purposes of our assessment given its relevance to the Parties' proposals under the FRAND element in relation to committing resources to research and development of the Key Products.

make a big impact in the 'big scheme of things', and that the implementation of these procedures was not unprecedented within ICE. Trayport also told us at its response hearing that the implementation of its monitoring and enforcement procedures would not be substantially costly or onerous, and that the costs to customers of monitoring the Parties' compliance or making a complaint under this remedy would be reasonable.

Parties' Remedy Proposal: Separation element overview

12.110 We provide a summary of the Separation element below (with further details in Appendix H):[282]

(a) *New Trayport Board:* Trayport would remain a separate legal entity within the ICE Group, with a new Trayport Board of directors (defined above as the New Board) comprising a majority of 'non-ICE affiliated' directors (including the Chairman), and a minority of directors representing ICE. The participation of directors representing ICE would be limited where appropriate, eg due to conflicts of interest or confidentiality requirements. The New Board would be responsible for Trayport senior management remuneration and appointments, as well as appointing replacements for any 'non-ICE affiliated' directors.

(b) *Reporting lines:* Trayport's senior management would report to ICE's data services business, subject to the confidentiality safeguards under the Firewall element (see below for its description). There would be no management reporting lines to ICE's exchange or clearinghouse businesses.

(c) *ICE veto rights:* ICE would limit its veto rights to ensure that ICE did not interfere in Trayport's ordinary course of business, and did not have 'decisive influence'.

(d) *ICE/Trayport commercial arrangements:* all commercial arrangements would be made at arm's length. Neither Trayport nor ICE would tie the sale of any other products or services to the products covered by the FRAND element, ie the Key Products.

Parties' Remedy Proposal: Firewall element overview

12.111 In their response to our Remedies Notice, the Parties told us that ICE would 'continue to operate Trayport as a separate business within ICE', and

[282] Parties' supplemental submission on the Parties' Remedy Proposal (9 September 2016).

therefore it was 'entirely feasible to ring-fence and safeguard [Trayport's] customers' confidential data and 'soft' information from access by ICE affiliates including its exchanges and clearinghouses'.[283] We provide a summary of the Firewall element below (with further details in Appendix H):[284]

(a) *Scope:* Trayport would not use customer-specific commercially sensitive information for any purpose other than in connection with developing, supplying and supporting its software products. No access to this commercially sensitive information would be provided to ICE employees involved in the operation, development, or strategic decision-making areas in relation to ICE's exchanges or clearinghouses in respect of European utilities.

(b) *Confidentiality firewalls:* 'firewall mechanisms' would be put in place in relation to physical segregation of, and access controls to, Trayport IT systems. Trayport employees would also be physically separated from the ICE employees referred to in *(a)* above.

(c) *Procedural measures:* ICE and Trayport would implement 'reasonable' procedures to prevent commercially sensitive information from being used or accessed by employees 'other than those having a legitimate need for such information in connection with the permitted uses, ie in connection with developing, supplying and supporting its software products'.

(d) *Code of conduct:* employees would be bound by a code of conduct requiring compliance with the confidentiality safeguards, with any breach giving rise to disciplinary sanctions.

Parties' Remedy proposal: Parties' views on overall remedy effectiveness

12.112 The Parties put forward their views of how the Parties' Remedy Proposal might address some of the concerns we highlighted in our Remedies Notice in relation to the effectiveness of a FRAND remedy, ie that:[285]

(a) such a remedy would not produce the innovation and efficiency generated by dynamic competition;

[283] Parties' joint response to the Remedies Notice (31 August 2016), paragraph 4.1.
[284] Parties' supplemental submission on the Parties' Remedy Proposal (9 September 2016).
[285] Remedies Notice (16 August 2016), paragraph 19.

(b) it would be impossible to design the remedy so that it covered all new products and services; and

(c) customers might not be able to identify if they were being given access on FRAND terms.

12.113 In relation to the concern that a FRAND remedy would not produce the innovation and efficiency generated by dynamic competition, ICE told us that this could be addressed by developing an 'annual innovation plan' and continuing to apply resources that had been applied in the past to innovation at Trayport. At its response hearing, Trayport added that a requirement for its COO to produce an 'annual innovation plan' was simply 'formalising' what Trayport was already currently doing.

12.114 In relation to the concern that it would not be possible to design a FRAND remedy so that it covered all new products and services, the Parties' submitted that the FRAND element would cover Trayport's main software products currently being offered to traders, trading venues and clearinghouses, as well as their respective 'successor products'.[286]

12.115 Finally, in relation to the concern that customers might not be able to identify if they were being given access on FRAND terms, ICE told us during its response hearing that Trayport's customers would know 'instantly' if Trayport had breached the FRAND remedy, and that it would be 'obvious' if standards had not been adhered to. Trayport also told us that in relation to providing its customers with the service they agreed to, any problem would be 'discernible' to market participants, and that it could be discovered quickly, eg since brokers would talk to each other.

Parties' Remedy Proposal: our assessment of effectiveness

12.116 We now turn to assessing the effectiveness of the Parties' Remedy Proposal in addressing the SLC and its resulting effects we have identified.

12.117 We carefully reviewed the individual elements of the Parties' Remedy Proposal and considered their interaction with each other. Based on this, we considered that if the Separation element of the Parties' proposal was effective and resulted in a truly autonomous Trayport, which would pursue its own independent competitive strategy, then this would obviate the need for a FRAND or a Firewall element.

[286] Parties' supplemental submission on the Parties' Remedy Proposal (9 September 2016).

- *Effectiveness assessment of the Separation element*

12.118 We considered the following areas to assess the effectiveness of the Separation element:

(a) its impact on the SLC and its resulting adverse effects;

(b) its practicability; and

(c) its risk profile.

- *Separation element: impact on the SLC and its adverse effects*

12.119 We considered the extent to which Trayport would be independent from ICE under the Parties' Remedy Proposal given in particular that ICE would still retain 100 per cent ownership of Trayport.

12.120 In relation to the composition of Trayport's New Board, the Parties have proposed that it would still have a minority of ICE-affiliated representatives. We also noted that ICE had requested some degree of operational and financial control over Trayport, eg 'high-level' control over Trayport's operating and capital expenditure budgets, as well as certain reporting requirements to ICE. Whilst ICE told us at its response hearing that Trayport would have 'complete freedom' with an 'independent' Board, we considered that in practice, this proposal would limit Trayport's autonomy and independence.

12.121 In their submissions on the Parties' Remedy Proposal, no third parties told us that the Parties' proposed Separation element would be effective. The following third parties raised particular concerns in this regard:

(a) Broker B told us that the concept that a business could be run in an autonomous manner whilst its senior management (who would also likely form part of the new Trayport Board) reported to the ICE data services business (which presumably also reported to the ICE Group senior management) was 'circular in its logic'. It added that under ICE ownership, Trayport would be part of the same group and rightly wish to act in the 'best interests of the ICE Group'. It also told us that regardless of the composition or appointment process of the new Trayport Board, ICE would exercise control of the business as the ultimate owner, and that it was 'implausible' to suggest that the new Trayport Board's

operational and strategic decision making would not be influenced, either directly or indirectly, by the wider ICE Group.[287]

(b) Exchange C told us that even if ICE limited its voting rights on the New Board, ICE might still have the 'ability to materially influence the strategy and policy of Trayport'. It told us that minority shareholder rights can be extensive (including veto rights) and allow ICE to influence, directly or indirectly, a whole range of matters that may be put to a shareholder vote or decided by the New Board. It added that ICE's influence would be significant as the suggested minority of ICE Directors would represent the 100 per cent owner of Trayport. It also told us that the fact that Trayport management would report to ICE's data services division, rather than its exchange and clearinghouse businesses was 'meaningless and inadequate', and that such provisions could be easily circumvented given that ICE's data services business division was an integral part of ICE and it would allow ICE to influence the key decision makers at Trayport.[288]

(c) RWEST told us that whilst the Parties' Remedy Proposal offered a 'degree of independence to Trayport management and COO', it did not believe that the separation would be 'sufficient to address' the 'wider concerns about competition and to provide genuine scrutiny and challenge'.[289]

12.122 In our view, the primary issue which would undermine the effectiveness of the Separation element lay in ICE being the ultimate owner of 100 per cent of Trayport, which we considered to be incompatible with a fully independent and autonomous Trayport:

(a) We considered that ICE's full ownership of Trayport combined with its industry knowledge, standing and greater financial resources would likely result in ICE's influence being disproportionate to its voting rights.

(b) Even if ICE representatives on the New Board did not retain any voting rights (although the Parties had not proposed this), we considered that other members on the New Board would still attach weight to their views and that ICE would still retain the ability to influence the New Board.[290]

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[287] Broker B submission on the Parties' Remedy Proposal, page 2.
[288] Exchange C submission on the Parties' Remedy Proposal, page 4.
[289] RWEST submission on the Parties' Remedy Proposal, page 1.
[290] In addition, under section 172 of the of the Companies Act 2006, Directors must act in a way they consider most likely to promote the success of the company for its members (ie shareholders) as a whole and in doing so must have regard to a number of matters. As such, the Directors would be required to consider ICE's interests.

12.123 In our view, the Separation element effectively represents a 'hold-separate' behavioural remedy measure insofar as it would be implemented as an ongoing and indefinite measure designed to regulate/constrain the behaviour of the Parties.[291]

12.124 For any 'hold-separate' arrangement, and in the absence of the CMA (or any external monitor) having to monitor Trayport's day-to-day activities and its dealings with its customers (including with ICE), we considered that in practice, compliance would likely take the form of periodic audits or compliance checks which would largely be based on the representations made by ICE/Trayport in relation to their compliance, including the reporting of any breaches. We did not consider this monitoring arrangement to be effective in this case, given that this would not be materially different in substance from self-monitoring, in particular given our concerns in relation to the extent to which Trayport would truly be independent from ICE.

- *Separation element: practicability*

12.125 As noted above, we concluded that ICE continuing to hold Trayport as a wholly-owned subsidiary was incompatible with the aim of achieving autonomy from ICE for a newly-formed Trayport board. Nevertheless, even if we had concluded that the Parties' proposals on operational autonomy were effective, we considered that the Separation element would require ongoing monitoring and that compliance with the Separation element would itself be difficult to monitor.

12.126 This ongoing monitoring, supervision and oversight would give rise to monitoring costs for an indefinite period given that we have not concluded that the SLC would be time-limited. In addition, we concluded that the need for monitoring would introduce risk as to the overall effectiveness of the Parties' Remedy Proposal.

- *Separation element: risk profile*

12.127 Given our concerns that ICE's ultimate ownership of Trayport would undermine the full independence and autonomy of Trayport under the proposed structure, we concluded that there was a high risk that this would not be effective in addressing the SLC. We considered that this risk would ultimately be borne by Trayport's customers.

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[291] In response to the RWP, the Parties referred to their remedy proposal 'with its structural separation elements'. While we disagree with this characterisation, we have not placed weight on this and assessed the Parties' Remedy Proposal on its substance.

- *Our conclusions on the Separation element*

12.128 Based on the above, we concluded that the Separation element would not be effective. In summary, we concluded that:

(a) complete autonomy from ICE for a newly-formed Trayport Board would be incompatible with Trayport being wholly-owned by ICE;

(b) there would be a need for ongoing monitoring and compliance over this remedy to ensure Trayport's independence, and we would not find it acceptable to entrust this to the New Board for self-regulation. We also have concerns in relation to how an external monitor might be able to verify compliance (see paragraph 12.124); and

(c) given our concerns as to its effectiveness, this proposal has an unacceptable risk profile.

12.129 As mentioned above, we had considered that if the Separation element was effective, and Trayport was fully autonomous and independent of ICE, this would not necessitate the FRAND or Firewall elements. However, based on our assessment above, we did not consider this to be the case.

12.130 Given that the Parties' Remedy Proposal was designed to work as a package of measures, we considered whether the constituent elements of the Parties' Remedy Proposal would together result in effective remedial action. Before doing do, we assessed the FRAND and Firewall elements of the Parties' Remedy Proposal.

- *Effectiveness assessment of the FRAND and Firewall elements*

12.131 We first considered whether the Parties' Remedy Proposal as a whole would address the concerns we had raised in relation to a stand-alone FRAND remedy, in particular in relation to its specification, circumvention, distortion and monitoring and enforcement risks.

- *FRAND element: Specification, circumvention and distortion risks*

12.132 In relation to the specification risks we had identified for a stand-alone FRAND remedy, we stated that there were a number of difficulties in trying to capture and cater for all eventualities in a dynamic and evolving sector such as the software industry.

12.133 The Parties proposed their own wording to set out the scope of its commitments under the FRAND element of the Parties' Remedy Proposal

(see also Appendix H). We considered that this illustrated a number of specific difficulties in specifying FRAND terms:

(a) *Products within scope:* the Parties defined the Trayport products which would be covered by FRAND terms, ie the Key Products, whereby Trayport's main software product offering, including both its current products and their 'successor' products would be covered. However, by limiting the scope of the products covered by FRAND terms this would make it easier for ICE/Trayport to circumvent a FRAND remedy for any new products and future services (eg hosting services or any future services that Trayport's customers might require). Whilst tying the FRAND terms to 'successor' products might capture updated and newer versions of Trayport's current software products, we considered that this would only work if new products were substantially similar to older products whereas over time in a dynamic and innovative market these similarities are likely to reduce.

(b) *Innovation and development:* we noted that Trayport's requirements in relation to innovation, eg the 'annual innovation plan', would only apply to Trayport's Key Products. We considered that as products evolve and new services are created, this would result in new products falling out of scope from the FRAND remedy.

(c) *Dynamic market:* finally, we considered that given that the market is dynamic and could change substantially over time, a FRAND remedy specified today, would become less effective over time.

12.134 We considered that even if the scope of the proposed FRAND terms were amended to cover all current and future products and services, and not just those defined as Key Products, it would remain extremely difficult, if not impossible, to specify FRAND principles that were sufficiently clear and comprehensive, and catered for all future eventualities.

12.135 In this regard, we noted the views of third parties who commented on the Parties' Remedy Proposal (see Appendix G for the details of this evidence), highlighting that it would be very difficult, or impossible, to mitigate the specification risks in the current case:

(a) Exchange C told us that any obligations under the Parties' Remedy Proposal would 'struggle to be sufficiently comprehensive' to ensure that 'ICE could not circumvent these specific obligations by foreclosing competitors through other means'. It added that trading venues were active in a large number of products with different characteristics with each trading venue operating under different technical and commercial

terms with Trayport. It told us that capturing 'all these situations in a FRAND framework would be very challenging and new situations appear all the time due to the constantly changing nature of the European energy business'.[292]

(b) Broker B told us that FRAND style remedies' would be 'impossible to design, implement, monitor and enforce both now and, importantly, in the future'. It told us that the Parties' Remedy Proposal was attempting to 'guarantee' past practice going forward, and that this was not only an 'incorrect benchmark but also wholly unsatisfactory for an uncertain future where requirements and reasonable requests' were 'inherently unknown and unpredictable'. It told us that the Key Products might also change as they had done so over the last 10 years, eg the STP link had not existed 10 years ago. It questioned how 'new key products' might be identified and included.[293]

(c) Exchange D did not consider the Parties' Remedy Proposal to be effective, and told us that the FRAND element of the Parties' Remedy Proposal used language that was 'either ambiguous or hollow', eg given that ICE had the 'opportunity to use Trayport to its benefit in subtle ways', FRAND terms qualified by a standard of 'substantially similar' would not be sufficient. It added that this might illustrate the 'difficulty of crafting remedies with the necessary bite to address the concerns at hand'.[294]

12.136 We considered that the Parties' proposals under FRAND would not address the specification risks associated with the design of a comprehensive set of FRAND terms.

12.137 In relation to how we might ensure that innovation at Trayport was not curtailed or slowed down to the detriment of Trayport's customers, the Parties proposed that a 'customer committee' could be set up, which would be consulted by the COO to produce an 'annual innovation plan', which would be approved by a new Board.

12.138 Some third parties raised the following concerns in relation to the Parties' proposal concerning innovation:

(a) RWEST told us that the Parties' proposed commitment to the research and development and maintenance of the Key Products was 'insufficient

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[292] Exchange C submission on the Parties' Remedy Proposal, page 3.
[293] Broker B submission on the Parties' Remedy Proposal, page 2.
[294] Exchange D submission on the Parties' Remedy Proposal, page 2.

to secure the development of newer, innovative, open and flexible technologies by Trayport', and risked the technology becoming 'increasingly outdated and incompatible with the technologies and platforms used more widely in the market by Trayport's customers'.[295]

(b) Broker B told us that in relation to the Parties' proposed commitment to devote resource to research and development, resource being guaranteed to be available did not mean it would be used well and in good faith for the benefit of Trayport and its customers when, in many cases, this benefit would be to the detriment of the owner of Trayport itself. It told us that ultimately it was 'easy to envisage scenarios where foreclosure would occur by lack or poor use of limited resources or where Trayport would be denied access to extra investment for product or service improvement'.[296]

12.139 We note that under the Parties' proposed approach the decision as to which innovations would be taken forward would still be determined solely by Trayport's New Board, and under the ultimate ownership and influence of ICE (we considered separately the Parties' proposals on the autonomous operation of Trayport earlier in this section at paragraphs 12.118 to 12.130). We considered that it would also be difficult to monitor and assess whether the suggestions of the customer committee were being implemented and/or considered on a fair basis.

12.140 We also considered whether requiring the customer committee to direct prescriptively which innovation proposals should be taken forward, would solve this issue (this was not proposed by the Parties in their written submissions). However, we concluded that this could lead to distortive effects on the market and prevent Trayport from responding on an agile and commercial basis to market developments.

12.141 In addition, we noted that the Parties have proposed that FRAND terms should apply for 10 years, also noting that ICE told us that it was open to discussing what the appropriate duration should be. Given the indefinite nature of our SLC finding, we considered that a limit on the duration of the FRAND element would not be appropriate in this case.

- *FRAND element: Monitoring and enforcement risks*

12.142 Given the high specification risks associated with the design of an effective FRAND remedy, if FRAND terms cannot be sufficiently comprehensive in

[295] RWEST submission on the Parties' Remedy Proposal, page 2.
[296] Broker B submission on the Parties' Remedy Proposal, page 2.

scope and their interpretation and application are unclear to both Trayport and its customers in practice, we considered that this would undermine the effectiveness of any monitoring or enforcement procedures.

12.143 In relation to the monitoring and enforcement procedures under the Parties' Remedies Proposal, we received the following comments from third parties:

(a) Exchange C told us that unlike a regulated utility network, in 'fast-moving markets characterised by strong network effects', a complaints procedure and subsequent arbitration would be too 'slow and cumbersome'. It told us that by the time arbitration resolved any dispute, 'significant liquidity could have shifted away from foreclosed competing venues and significant harm done to competition'. It added that an 'ex-post quarterly report' prepared by Trayport on its own would not be sufficient, and that the Parties' Proposed Remedy would likely require a 'team of monitoring trustees' due to the amount of data to monitor.[297]

(b) Exchange D told us that without 'full access to information', it would be 'very difficult for market participants on an ongoing basis to ensure' that they were provided FRAND access terms, 'especially with respect to new products or services offered by Trayport and prioritisation of resources'. It also told us that the Parties' proposals in relation to monitoring and enforcement were 'not realistic' given that: (i) 'any protracted enforcement process' might 'permanently harm the aggrieved party' given how quickly liquidity could move among European utilities products; (ii) most market participants being dependent on Trayport, would be reluctant to 'further jeopardize the relationship by pursuing dispute resolution'; and (iii) it would not be realistic to 'expect smaller market participants to expend valuable resources to assume the role of monitor'.[298]

12.144 We considered that the Parties' proposed procedures would not be sufficient to address the difficulty of detecting non-compliance. These procedures also fail to address our concern that once detected, proving that a breach has happened would be difficult, in particular if Trayport were to contest a complainant's claim, given the information asymmetry that exists between Trayport and the complainant (or even an independent body appointed to administer such enforcement procedures). In our view, these difficulties would be likely to deter complainants from pursuing a complaint or case against Trayport for an alleged breach of the FRAND terms.

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[297] Exchange C submission on the Parties' Remedy Proposal, page 3.
[298] Exchange D submission on the Parties' Remedy Proposal, page 3.

12.145 We also noted the concerns raised by Exchange C and Exchange D above that following a breach of FRAND terms, any protracted complaints or dispute resolution process could potentially cause significant and irreversible harm to Trayport's customer. We considered that given the high specification risks associated with the design of a FRAND remedy, this would make it more challenging to provide an adequate remedy to any breach.

12.146 Based on this, we concluded that the Parties' Remedy Proposal would not address our concerns in relation to monitoring and enforcement in relation to compliance of FRAND terms.

- *Assessment of the Firewall element*

12.147 In relation to the Firewall element, we considered that its intended effect was relatively narrow in scope, ie given its aim of restricting the sharing of confidential and commercially sensitive information between ICE and Trayport. It therefore does not address the much wider competition concerns in relation to partial foreclosure that go towards our SLC decision. We consider below whether it would do so in conjunction with the FRAND and Separation elements of the Parties' Remedy Proposal.

12.148 In any case, we considered that in relation to the design of an effective Firewall element, the scope of such a remedy would need to be comprehensive and cover all possible types of 'soft' information and their various forms of transfer.

12.149 A number of third parties raised the following concerns in relation to the Firewall element:

(a) Exchange C told us that the confidentiality firewall protections offered by ICE where information was shared on a 'need-to-know basis', as well as a code of conduct, were 'meaningless without adequate monitoring'. It told us that monitoring of information flows, given the amount of sensitive information that could pass from Trayport to ICE on a day-to-day basis and the amount of information that would be expected to pass from Trayport senior management reporting to ICE, would have to be extensive.[299]

(b) Broker B told us that confidentiality firewall restrictions were 'extremely difficult to implement and monitor', and that there was the potential for 'soft' breaches to occur. It added that it was 'unrealistic to believe that

[299] Exchange C submission on the Parties' Remedy Proposal, page 3.

soft disclosures, whether intentional or otherwise, would not occur over time and that they could be detected or breaches remedied in an effective manner'.[300]

(c) ISV B told us that being compliant with a confidentiality firewall within one company would be 'hard to supervise' and require ongoing effort.[301]

12.150 RWEST however told us that the confidentiality firewall and a commitment to autonomous operation of Trayport would address many of its 'concerns in relation to the use (and potential misuse) of trade data', but added that it would 'not be sufficient to address the wider lessening of competition for trade-related services'.[302]

12.151 In our view, designing and implementing this element of the Parties' Remedy Proposal would be subject to considerable specification risks, and this would be particularly challenging given that we would expect there to be some degree of interaction and information sharing between ICE and its wholly-owned subsidiary Trayport, whether this was required for regulatory compliance or financial reporting purposes, or for the purposes of implementing some of the initiatives required to bring about the 'customer benefits' of the Merger put forward by the Parties.

12.152 We also note that notwithstanding these specification risks, even this measure would need to be permanent, with monitoring and enforcement procedures in place. We would consider that the effectiveness of any monitoring and enforcement procedures would be undermined by the Firewall element's specification risks.

12.153 We therefore concluded that whilst the Firewall element may prevent ICE and Trayport from sharing certain confidential information which could be clearly specified, eg customer-specific trading data, it would be much less effective in preventing any transfer of 'soft' confidential information as set out in our SLC decision, eg such that ICE might gain a first-mover advantage in markets where rivals were planning to launch new products.

- *Parties' Remedy Proposal: our conclusions on effectiveness*

12.154 Although the Parties put forward their remedy proposal as a single package of remedies, we have also considered each element separately before

[300] Broker B submission on the Parties' Remedy Proposal, page 2.
[301] ISV B submission on the Parties' Remedy Proposal.
[302] RWEST submission on the Parties' Remedy Proposal, page 1.

concluding in the round on the package as a whole. We set out below the conclusions of our assessment:

(a) We considered that if the Separation element was effective, then it would obviate the need for a FRAND or Firewall element to be included in the Parties' proposed package of remedies, as it would create a fully independent and autonomous Trayport. However, having assessed its effectiveness, we concluded that ICE's ultimate ownership of Trayport would not be compatible with an effective Separation element, and would undermine Trayport's full independence and autonomy to pursue its own competitive strategy.

(b) We concluded that the Parties' Remedy Proposal would not address our fundamental concerns that a FRAND remedy would not be effective in this particular case. In particular, in designing the FRAND element of the Parties' Remedy Proposal, it would be subject to the same risks as designing a stand-alone FRAND remedy, namely in relation to specification, circumvention, distortion and monitoring and enforcement risks. In particular, we concluded that the specification risks cannot be mitigated in a dynamic market (like the market in which Trayport operates), where Trayport's customers have different development requirements and needs and where products and services could change significantly.

(c) We also concluded that there would be considerable specification risks in relation to designing a comprehensive Firewall element such that it would cover all types of 'soft information' and their means of transfer between ICE and Trayport.

(d) We also considered whether the constituent elements of the Parties' Remedy Proposal would address each other's deficiencies and concluded that this was not the case. For example, the FRAND element would not address our concerns in relation to Trayport's independence under the Separation element, and the Separation element would not address the specification risks associated with the design of the FRAND element. The Firewall element would only address the sharing of customer specific data and not 'soft' confidential information.

(e) Finally, we considered whether our concerns could be addressed by means of amendments to the Parties' Remedy Proposal. We found that no amendments could address all of our concerns regarding the specification and monitoring and enforcement risks.

(f) Based on the above, and having considered the effectiveness of the Parties' Remedy Proposal both in its entirety, and its constituent elements, we concluded that the Parties' Remedy Proposal would not be an effective remedy to the SLC and its resulting adverse effects that we have identified.

Effectiveness assessment of the Open API measure

12.155 In our Remedies Notice, we invited views on: *(a)* whether opening Trayport's API to Trayport's front-end access (Joule/Trading Gateway) and/or back-end matching engine products (BTS, ETS and GV Portal), would facilitate the entry of a viable alternative platform to Trayport; and *(b)* whether this might be an effective remedy.[303]

12.156 However, we stated our concerns in our Remedies Notice that the intended benefits of opening Trayport's API may not be certain or timely, and even with the emergence of a new competing platform to Trayport, that it may not be a sufficient constraint on Trayport to be an effective remedy.[304]

Parties' and third parties' views

12.157 At its response hearing, Trayport told us that whilst it was 'technically possible' to open up Trayport's API, this would subject Trayport to considerable complexity and change its whole business model given the 'interconnected' nature of its software products, and that opening any APIs would require 'considerable' effort on Trayport's part. However, the Parties told us that an Open API measure was neither realistic nor proportionate, and added that the 'functional integration' of Trayport's back-end and aggregation/front-end technology was 'integral to Trayport's business model and ability to provide the service so valued by its customers'. The Parties also told us that the CMA had done no analysis of what an Open API measure would do to Trayport in the medium-term, and that Trayport would see an Open API remedy as an 'existential threat to its business'.[305] Trayport added at its response hearing that under an open API business model, it was likely that it would become gradually more costly for Trayport to support its platform.

12.158 ICE told us that Trayport's closed API policy was not specific to the Merger, and that under our counterfactual finding in our Provisional Findings, we had not assumed that Trayport would have opened its API. It added that there

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[303] Remedies Notice (16 August 2016), paragraph 21.
[304] Remedies Notice (16 August 2016), paragraph 22.
[305] Parties' joint response to the Remedies Notice (31 August 2016), paragraphs 5.2 and 5.3.

may be potential 'knock-on effects' as a result of opening Trayport's API, and that it could not be certain what these effects might be.

12.159 The Parties also characterised third party views supporting the opening up of Trayport's APIs as opportunistic, and noted that an opening of Trayport's APIs would not have happened in the ordinary course.

12.160 We received differing views from third parties regarding whether or not an Open API measure could be an effective remedy. The following third parties told us that opening the APIs (either on its own or combined with another remedy measure) would be the only effective remedy:

(a) Trader B told us that ICE would be 'acceptable as the purchaser of Trayport only under the condition' that both the Open API measure and the FRAND remedy were 'implemented and monitored effectively'.[306]

(b) Trader C told us that a full divestiture of Trayport would 'not, of itself, change the current competitive situation', and that 'the best way of countering' this was to 'facilitate the conditions for new entry' by opening Trayport's APIs for both its front-end access and back-end matching engine products.[307]

(c) EFETnet told us that full divestiture would 'not fundamentally solve the 'de-facto' monopoly position held by Trayport', and considered that an Open API measure combined with the partial software divestiture of Trayport's front-end and Clearing Link components, 'could be an effective remedy'.[308]

12.161 Four third parties (Griffin, ISV B, RWEST and Engie) considered that both the Divestiture remedy and an Open API measure (either on its own, or combined with a partial software divestiture remedy or a FRAND remedy) would be effective.[309]

12.162 In contrast, some third parties raised concerns about the effectiveness of an Open API measure:

(a) ICAP told us that whilst an Open API measure would address the SLC concern and reduce the 'monopolistic power that Trayport held in the market prior to the merger', it doubted that an Open API measure could

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[306] Trader B submission on the Parties' Remedy Proposal.
[307] Trader C submission on the Parties' Remedy Proposal, page 1.
[308] EFETnet response to the Remedies Notice, page 2.
[309] Griffin response hearing summary, paragraphs 13 to 18; ISV B response hearing summary, paragraphs 10 to 16; RWEST response to the Remedies Notice, page 2; and Engie response to the Remedies Notice, page 1.

be implemented effectively. It told us that it would be 'practically impossible to specify, implement and monitor a mandatory open API without the high risk that this was circumvented or frustrated in any number of ways', eg conformance testing could be complicated and difficult to pass, API documentation could be poor or incomplete, or the API could be unreliable or unstable (among others).[310] It therefore considered that unless there was a 'true will to provide an open API by the party', it doubted that it would ever come to pass, no matter how complete the regulations appeared to be at outset.[311]

(b) EFET told us that whilst the opening of Trayport's API could 'foster competition' and 'enable alternative services to Trayport to arise', it was aware of the 'commercial and technical difficulty to offer competing services to Trayport'.[312]

(c) Exchange D told us that in relation to an Open API measure, the 'only potential way to implement such a technical remedy would be by establishing a group of market participants working alongside' an independent monitor. However, it considered that the process would still be 'slow and costly' and there was 'no certainty any potential outcome would sufficiently address the SLC'. Finally, it told us that any Open API requirement would need to be accompanied by FRAND access terms as otherwise ICE/Trayport could frustrate or circumvent the Open API, including by requiring excessive compliance terms to gain access to the Trayport network or to utilise Trayport support resources.[313]

(d) Engie told us that whilst an Open API measure would 'certainly help to foster competition and as such reduce the effect of the SLC', the implementation of these measures would 'most probably take significant time'. It told us that it would be 'difficult to assess what the actual result' would look like. It considered that even with open APIs, ICE/Trayport 'could still seek to exercise behaviours described in the different theories of harm'.[314]

(e) Financial Institution B told us that even with the implementation of an Open API remedy, 'market participants would still face significant barriers in developing a viable alternative to Trayport'. It considered that in order for an alternative front-end solution to be successful, there

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[310] ICAP response to the Remedies Notice, page 4.
[311] ICAP response to the Remedies Notice, page 4.
[312] EFET response to the Parties' Remedy Proposal, page 2.
[313] Exchange D response to the Remedies Notice, page 3.
[314] Engie response to the Remedies Notice, page 1.

would need to be a 'significant migration of market participants from Trayport to the alternative platform'. It told us that in the 'absence of another front-end solution, market participants would be left with the option of establishing individual connections to the various brokers and exchanges, a costly and time consuming process'.[315]

12.163 There were also differing views from third parties in relation to which part or parts of the Trayport API should be opened, including just front-end, just back-end, or both front- and back-end software products. For example, whilst ISV B and Engie considered that an Open API measure should involve the opening of Trayport's back-end API,[316] RWEST and Trader C told us that the API should be opened for both Trayport's front-end access and back-end matching engine products.[317]

12.164 In relation to the timeliness of an alternative to Trayport emerging in the event of an open API, Griffin suggested that it could take up to three years to introduce an alternative trading system, and therefore FRAND terms and the removal of inconsistent contractual terms would be required for protection in the interim.[318] However, this view on timescales for entry was disputed by another third party (RWEST) who told us that there were several potential providers of similar platforms, and that these could be deployed in relatively short timescales.[319]

Open API measure: our assessment of effectiveness

12.165 We set out below our assessment of the effectiveness of an Open API measure, considering the risks around designing an effective behavioural remedy, namely its specification, circumvention, distortion and monitoring and enforcement risks, as well as the timeliness and likelihood that the Open API measure would achieve its intended benefits, ie that following Trayport opening its API, a viable and alternative platform to Trayport would emerge to impose a sufficient competitive constraint on Trayport to address the SLC.

- *Risks around the design of an Open API measure*

12.166 We noted that there was no consensus from third parties on which Trayport software component's API should be opened under a possible Open API measure, or whether it should be implemented as part of a broader package

[315] Financial Institution B response to the Remedies Notice, page 2.
[316] ISV B response to the Remedies Notice, page 2; and Engie response to the Remedies Notice, page 1.
[317] RWEST response to the Remedies Notice, page 2, and Trader C submission on the Parties' Remedy Proposal, page 1.
[318] Griffin response to the Remedies Notice, page 6.
[319] RWEST response to the Remedies Notice, page 3.

of remedy measures, eg a partial software divestiture remedy or a FRAND remedy as suggested by some third parties.

12.167 In that context, we considered that the specification risks for this remedy were high for the following reasons.

(a) Firstly, in relation to the question of whether we should require the API to be opened for the back-end only, the front-end only, or both, we considered that this would depend on whether the SLC would likely be addressed by market entry from third party front-end providers (in which case, we would likely require Trayport's back-end APIs to be opened), or from third party back-end providers (which would require opening the APIs on Trayport's front-end), or both. However, in the absence of identifying any upfront third party software providers to connect to Trayport's open APIs, each option would still leave open the risk that market entry might not take place (or if it did take place, that it would not take place in a timely manner, or be sufficient to impose a competitive constraint that would address the SLC).

(b) Secondly, we considered that there would be high specification risks in relation to setting out the terms under which any API should be opened, as well as Trayport's obligations to first implement such a remedy, and then to maintain an open API for an indefinite period. We considered it likely that the commercial access terms of any open API arrangement would require a FRAND-type measure, which as we concluded above, would itself, face considerable risks, in particular in relation to its specification.

12.168 We considered that any Open API measure would need to be in place for an indefinite period, and would require monitoring and enforcement procedures as well to ensure that Trayport maintained its open APIs and provided fair access to third parties, eg on FRAND terms. However, given its specification risks, we considered that the Open API would not be capable of effective monitoring.

12.169 In addition, we considered that there was considerable uncertainty in relation to what impact an Open API measure would have on the market and on Trayport, and this uncertainty leaves open the possibility that an Open API measure would give rise to market distortions, or unintended consequences, eg were such a remedy to undermine the viability of Trayport, or its incentives to invest.

12.170 Based on the above, we considered that the risks surrounding the design of an Open API measure were high, and that these would undermine its effectiveness.

- *Timeliness and likelihood of entry*

12.171 We had serious concerns as to the timeliness and likelihood of the intended benefits of an Open API materialising. First, it is uncertain that an alternative platform would emerge; and second, even if entry did take place, we could not be certain of its timing, its effects on the markets and how it would address the SLC in a timely manner.

12.172 Whilst we considered it possible that ISVs such as Exxeta might already be well-placed to take advantage of Trayport's API being opened, it is not clear how Trayport or market participants would react once market entry actually took place, and how this would affect or alter the competitive dynamics in relation to Trayport's software products.

Open API measure: conclusions on effectiveness

12.173 We concluded that the risk profile associated with this remedy would likely be unacceptable given the issues in relation to designing an Open API measure, and also, the uncertainty that: *(a)* alternatives to Trayport would emerge on a sufficiently timely basis; and *(b)* these alternatives would represent a sufficient and viable constraint to Trayport that would address all of the concerns we have identified.

12.174 We also considered that having opened Trayport's API to its front-end, back-end or both, there would be an ongoing requirement to monitor the progress of such a remedy to ensure that it was on track to achieve its intended effects.

12.175 We concluded that an Open API measure would not represent an effective remedy to the SLC and its resulting adverse effects. Given this and our conclusion that any FRAND remedy and partial divestiture remedy would not be effective, we also did not consider that an Open API measure combined with either a FRAND remedy or a partial divestiture remedy would be an effective remedy, as suggested by some third parties.

Conclusion on remedy effectiveness

12.176 Based on our assessment above, we concluded that:

(a) a structural remedy requiring the full divestiture of Trayport would be effective; and

(b) the other remedy options we assessed, including a FRAND remedy, the Parties' Remedy Proposal and an Open API measure (and any combination of these remedy options) would not be effective in addressing the SLC and any resulting adverse effects that we have identified.

Relevant Customer Benefits

12.177 In considering remedies, the CMA may have regard to the effects of remedial action on any RCBs, within the meaning of section 30 of the Act, arising from the Merger situation. RCBs are limited by the Act to benefits to relevant customers in the form of lower prices, higher quality, greater choice of goods or services, or greater innovation in relation to goods or services. Relevant customers are customers at any point in the chain of production and distribution. A benefit is only an RCB if the CMA believes that:

(a) the benefit has accrued as a result of the creation of the relevant merger situation concerned or may be expected to accrue within a reasonable period as a result of the creation of that situation; and

(b) the benefit was, or is, unlikely to accrue without the creation of that situation or a similar lessening of competition.

12.178 If a benefit is an RCB, then the CMA may choose to modify a remedy, or change its selection, in order to ensure the retention of the RCB, and any RCBs foregone as a result of a remedy are considered as costs in the proportionality assessment.

12.179 We first set out the Parties' submission and third party views on the benefits to customers arising from ICE's ownership of Trayport, ie the relevant merger situation, before taking each of these points in turn to determine whether the cited benefit would represent an RCB within the meaning of the Act.

Parties' submission on 'customer benefits' arising from the Merger

12.180 In their joint response to our Remedies Notice, the Parties told us that a divestiture of Trayport would not 'preserve the customer benefits arising from

ICE's ownership,[320] and that it would deprive Trayport's current and future customers of the following benefits arising from ICE's ownership:[321]

(a) *Access to ICE's technology infrastructure:* the Parties told us that under ICE's ownership, Trayport would be a 'beneficiary' of ICE's 'world-class technology infrastructure',[322] which could enable it to deliver a 'level of performance reliability, and security to its customers not offered by its previous owners' (ie BGC/GFI).

(b) *Procurement cost savings:* the Parties told us that Trayport would 'achieve material cost savings from access to ICE's global procurement group', eg from purchasing IT hardware and software.

(c) *ICE data services:* the Parties told us that Trayport customers would be able to log on to one Trayport front-end screen to access ICE's data services (eg access to the ICE Market Data terminal, instant messaging and an options pricing/analytics offering), which would improve Trayport customers' efficiency and workflow.

(d) *ICE/Trayport joint expertise:* the Parties told us that the combination of ICE's and Trayport's 'complementary expertise' could be used to enhance delivery and use by customers of Trayport products, eg through ICE's expertise on access to, and use of, software on mobile devices.

(e) *New Agreement:* the Parties told us that there would be efficiencies/benefits to customers arising from the implementation of the New Agreement, ie improved distribution of ICE contracts (eg new continental power and recently launched contracts such as German power) via Trayport and new STP links. The Parties added that Trayport would benefit from 'ICE's acceptance of Trayport's commercial terms for exchange connectivity'.

12.181 The Parties also submitted in their joint response to the Remedies Notice that effective alternative remedial action to a structural remedy was available which would preserve the benefits to customers arising from ICE's ownership of Trayport.[323] We understood this alternative remedy to be ICE's

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[320] Parties' joint response to the Remedies Notice (31 August 2016), paragraph 1.3*(c)*.
[321] Parties' joint response to the Remedies Notice (31 August 2016), paragraph 2.5.
[322] For example, the Parties told us that Trayport would be able to: (i) use ICE's two data centres; (ii) have access to ICE's high-speed communications network linking customers to exchanges and clearinghouses operated by ICE and many of its competitors; and (iii) benefit from ICE's 'highly sophisticated cyber security program' and 'software development' capabilities, eg in relation to software development, testing and deployment. Source: Parties' joint response to the Remedies Notice (31 August 2016), paragraph 2.5*(a)*.
[323] Parties' joint response to the Remedies Notice (31 August 2016), paragraph 1.3*(c)*.

proposal for a behavioural FRAND access remedy, which was later modified into the Parties' Remedy Proposal.

12.182 The only benefits cited by a few of the third party respondents as arising from the Merger were limited to the New Agreement. For example, Exchange C told us that 'in the past ICE and Trayport were competing with each other, as a result, not all ICE products were listed on Trayport'. It considered that a 'benefit of the merger' was that ICE products would become 'available on Trayport increasing liquidity in the market'. However, it added that 'only a few ICE contracts in the gas and power areas' had been missing on Trayport in the past, and therefore this was a 'small benefit'.[324]

RCBs: our assessment

12.183 Whilst the Parties in their joint response to our Remedies Notice set out their views on the benefits of ownership under ICE to Trayport and its customers, they did not explain why these fell within the definition of RCBs.

12.184 However, for completeness, we considered each of these cited customer benefits in turn to determine whether they might be treated as RCBs within the meaning of the Act.

- *Access to ICE's technology infrastructure*

12.185 Whilst access to ICE's technology infrastructure might provide Trayport and its customers with improved performance reliability and security, we did not consider that this would be the only way in which Trayport would be able to gain access to equivalent infrastructure. As a software platform provider, ensuring and improving performance reliability and customer security would be of primary importance to Trayport. Given the essential and business-critical nature of these benefits, we considered that Trayport would have the relevant expertise in-house, recruit the relevant expertise, or seek to outsource any gaps in its expertise to third party providers which specialise in consulting on, and providing, such services, such as network security and IT performance.

12.186 Therefore, whilst ICE told us that upon completing its acquisition of Trayport, it had prioritised 'technology investment to remediate the urgent capacity, security, and reliability concerns of Trayport's management',[325] we would not consider such investments to only be possible under ICE's ownership.

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[324] Exchange C response hearing summary, paragraph 26.
[325] Parties' joint response to the Remedies Notice (31 August 2016), paragraph 2.5*(a)*.

12.187 We therefore did not consider Trayport's access to ICE's technology infrastructure to be an RCB within the meaning of the Act.

- *Procurement cost savings*

12.188 The Parties have not explained why this would represent an RCB, or submitted any evidence to demonstrate that under ICE's ownership, Trayport's prices would fall. Therefore, whilst Trayport might benefit from procurement cost savings as a result of being owned by ICE, we did not consider that there is any evidence to suggest that such cost savings would likely lead to lower prices for Trayport's customers.

12.189 We therefore did not consider procurement cost savings, or any other cost savings arising under ICE's ownership to be an RCB.

- *ICE data services*

12.190 The Parties told us that under the Parties' Remedy Proposal, there would be an arm's length agreement between ICE and Trayport (at ICE's option) with regard to the use and/or distribution by Trayport of ICE data products and services, and that Trayport's provision of ICE's data services would not be tied into any of its key software products, ie the Key Products covered by the FRAND element of its proposed remedy.

12.191 ICE told us that it envisaged its data products being used by, and made available to, customers through Trayport, and added that this would be at the customer's discretion. It added that there was neither the intent nor the ability to coerce Trayport customers to take ICE's data products, technically or otherwise. It added that whilst the implementation method of providing data services through Trayport had not yet been developed, this could be done 'without impacting Trayport's autonomous operation', eg via a distribution agreement.[326]

12.192 We note that Trayport customers would still be able to purchase ICE's data and analytics services on an independent basis. We also note in relation to whether the benefits to Trayport's front-end customers receiving ICE's data services via a single screen would be an RCB, that there are alternative third party market data service providers that would be able to provide similar data services as ICE, such that the proposed benefit is not one that can only accrue as a result of the Merger. If Trayport's end-users (eg traders) wished to have data services, it would be a commercial decision for either Trayport

[326] ICE e-mail to the CMA, 'ICE/Trayport: Consolidated Remedies Proposal' (9 September 2016).

or its customer to decide whether, and how, it would get access to those additional data services. For example, at its response hearing, ICE told us that its charting analytic software was 'very similar and akin to' what Bloomberg offered with its data terminal. In relation to charting and graphics software, ICE also told us that Trayport had no ability to offer these services, and that the customers themselves would in practice approach Bloomberg or Reuters and request a 'better analytics overlay'.

12.193 Based on this, we concluded that Trayport or its customers could approach third party data service providers to provide or receive (respectively) additional analytical or data services and this would neither necessitate ICE's data services, nor require ICE to own Trayport. In addition, we have insufficient evidence that Trayport's front-end users would value these additional data services.

12.194 In the absence of sufficient evidence to support the treatment of access to ICE's data services as an RCB, we concluded that this was not an RCB.

- *ICE/Trayport joint expertise*

12.195 We considered that whilst the combined expertise of ICE and Trayport might hypothetically benefit Trayport customers, it was not possible to conclude that this would be an RCB given insufficient detail and evidence put forward by the Parties as to how customers might benefit. We further considered it likely that any gaps in expertise (whether at ICE or at Trayport) could be outsourced to a third party or the relevant personnel recruited. We therefore did not consider that expertise would qualify as an RCB.

- *New Agreement*

12.196 In their joint response to our Remedies Notice, the Parties argued that our Provisional Findings adopted a counterfactual where the New Agreement was treated as being Merger-specific, and therefore the 'efficiencies and benefits' to customers of the New Agreement should be treated as a customer benefit that would be lost under a Divestiture remedy.[327]

12.197 We considered that ICE had mischaracterised the counterfactual.[328] However, even if we were to treat the New Agreement in its current form as

[327] Parties' joint response to the Remedies Notice (31 August 2016), paragraph 2.5*(e)*.
[328] In our Provisional Findings, we stated that absent the Merger, it was not sufficiently certain that the New Agreement in its current form would have been entered into. The counterfactual is part of the analytical framework and involves selecting the most likely scenario.

Merger-specific, we did not consider that the cited benefits of the New Agreement would necessarily be lost under our Divestiture remedy.

12.198 We would note that whilst our view is that under a Divestiture remedy, the New Agreement should be unwound, the new owner of Trayport would face no restrictions on approaching ICE to discuss a similar agreement (eg an agreement that would provide the same benefits but on different commercial terms). We considered that a similar agreement could be voluntarily negotiated between ICE and the new owner of Trayport should this be in their commercial interests. Therefore, given that the cited benefits of the New Agreement could arise with Trayport under new ownership we did not consider the New Agreement to be an RCB.

12.199 Similarly, in relation to the Parties' cited benefit to Trayport of ICE's acceptance of Trayport's 'normal commercial terms', it is unclear how this would benefit Trayport customers.

12.200 Further and in any event, the Parties have not quantified the benefits to their customers of the New Agreement. Third party traders have indicated that they would not be prepared to pay more for the benefit of enhanced distribution of ICE contracts.[329] As such, even if the New Agreement were to constitute an RCB and be unavailable in the event of a Divestiture remedy, we would not consider that the benefits would be substantial and, as such, they would not represent a substantial cost of the Divestiture remedy.

RCBs: our conclusions

12.201 Based on our assessment above, we concluded that there would be no RCBs within the meaning of the Act arising from ICE's ownership of Trayport.

12.202 In addition, we were not persuaded that the alleged customer benefits put forward by the Parties would necessarily be fully compatible with the restrictions imposed under the Parties' Remedy Proposal, in particular in relation to the level of collaboration and interaction between ICE and Trayport that might be required to deliver on some of these cited benefits.

[329] Trader questionnaire responses.

Proportionality

12.203 Having concluded that full Divestiture is the only effective remedy available to address the SLC identified, we next considered whether the remedy is proportionate.

12.204 In applying the principle of proportionality, the CMA will select the least costly remedy, or package of remedies, that it considers to be effective.[330] Accordingly, where two remedies are equally effective, the CMA will choose the one which is least costly or least restrictive.

12.205 Where, as in this case, there is only one effective remedy available, we assessed whether it will be exceptional that the costs associated with that remedy are considered disproportionate to the scale of the SLC and its adverse effects.[331] We assessed the proportionality of the Divestiture remedy by considering whether it is no more onerous than required in the circumstances. In reaching our conclusions, we compare: *(a)* the scale of the SLC to be addressed; and *(b)* the potential costs to be associated with the Divestiture remedy.

Parties' submission on proportionality

12.206 In their joint response to our Remedies Notice, the Parties told us that requiring ICE to divest Trayport would be disproportionate given the nature of the SLC (ie vertical concerns) and the availability of effective alternative remedies which preserved the customer benefits arising from ICE's ownership of Trayport.[332]

Our assessment

12.207 We first considered the scale of the SLC identified in this case and the adverse effects arising from it. A number of features of the SLC were relevant in this regard:

(a) We found that the Trayport platform played a central role in the trading of European utilities across market participant groups. Traders are dependent on Trayport in order to trade in energy asset classes and ensure they could identify the best prices and find the highest liquidity across multiple venues.[333] For ICE's rival exchange and broker venues,

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[330] *CC8* , paragraph 1.9.
[331] *CC8*, paragraph 1.12.
[332] Parties' joint response to the Remedies Notice (31 August 2016), paragraph 2.5.
[333] See above at paragraph 7.195.

and to a lesser extent clearinghouses, the Trayport platform is a critical input in order to access traders' liquidity in European utilities asset classes.[334] Each of these groups stand to be adversely affected by the SLC through a reduction in their ability to compete with ICE. This loss of rivalry would also likely lead to direct harm to traders.[335]

(b) The SLC identified related to the whole Trayport platform, covering each of (i) Trayport's Joule/Trading Gateway screens; (ii) its back-end ETS and BTS; and (iii) its STP link.

(c) We concluded that the adverse effects arising from the SLC would extend into the longer term, in particular given its impact on dynamic competition in the sector.

12.208 We considered that neither the vertical nature of the SLC nor the partial foreclosure through which it was likely to manifest itself detracted from the scale of the SLC itself. The Parties did not make reasoned submissions or provide any evidence to the contrary.

12.209 Second, we considered the costs associated with the full Divestiture remedy. The potential costs in this case fall into three categories, namely: (a) costs to the Parties; (b) RCBs; and (c) other costs to third parties.

12.210 We found that there were no relevant costs to factor into the assessment. In particular:

(a) In assessing the costs to the Parties in completed mergers, the CMA will not normally take account of the costs or losses that will be incurred as a result of a divestiture remedy.[336] We do not consider there to be any exceptional circumstances in this case.

(b) In relation to RCBs, we have considered this issue above at paragraphs 12.177 to 12.202 where we concluded that there would be no RCBs within the meaning of the Act arising from ICE's ownership of Trayport.

(c) In relation to other costs to third parties, we have not found any such costs arising as a result of the Divestiture remedy.

12.211 In light of the scale, including the duration, of the SLC identified and the lack of any relevant costs to the remedy, and given our considerations in relation to the effectiveness of remedy options set out above, we concluded that the

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[334] See above at paragraph 7.196.
[335] See above at paragraphs 8.1574 to 8.16057.
[336] *CC8*, paragraph 1.10.

Divestiture remedy was no more onerous than necessary in the circumstances and will not produce adverse effects which are disproportionate to the aim pursued. Accordingly, we concluded that the Divestiture remedy is proportionate.

12.212 In general one or more of the following conditions will apply in the unusual circumstances where the CMA selects behavioural remedies as the primary source of remedial action:[337]

(a) *Divestiture is not feasible or the relevant costs far exceed the scale of the adverse effects of the SLC:* we concluded that a complete divestiture of Trayport to a suitable purchaser within a reasonable timeframe would be feasible, and represent an effective remedy. In relation to whether the relevant costs of a structural remedy would far exceed the scale of the adverse effects of the SLC, we considered that the harm arising from partial foreclosure of ICE's competitors and the loss of dynamic competition (including its cumulative effect over time) could be significant and have a widespread impact on all market participants, from competing exchanges and brokers through to traders. In relation to the 'relevant costs' of a structural remedy, we would note that ICE's decision to complete the Merger unconditional on any competition clearance was taken at its own risk. Therefore, we conclude that the costs to ICE of running a sale process or any reduction in Trayport's value that ICE might suffer as a result of a Divestiture remedy, should not be treated as 'relevant costs'. The Divestiture remedy would not raise costs for third parties and, as such, the costs do not exceed the scale of the adverse effects of the SLC.

(b) The SLC is expected to have a relatively short duration: our view is that the SLC is not time-limited.

(c) RCBs are likely to be substantial compared to the adverse effects of the Merger: we concluded that there were no RCBs arising from the Merger.

Remedy decision

12.213 We concluded that a complete divestiture of Trayport, ie the Divestiture remedy, would be an effective and proportionate remedy to address the SLC and its resulting adverse effects we have found.

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[337] *CC8*, paragraph 2.16.

12.214 Figure 13 below summarises the key elements of our Divestiture remedy, which we had discussed under our assessment of the effectiveness of the Divestiture remedy.

Figure 13: Summary of key elements of our Divestiture remedy

Remedy description

- We have decided to require ICE to divest Trayport in its entirety to a suitable purchaser within the agreed Divestiture Period.

Purchaser suitability

- We will assess the suitability of potential purchasers on their respective merits, and against the purchaser suitability criteria set out in *our Merger Remedies Guidelines*.
- We have not ruled out another operator of an exchange and/or clearinghouse, a broker, a trading firm, a consortium involving these market participants, ISV, or any other type of buyer as a potential purchaser.
- The eventual purchaser and final transaction documents would be subject to CMA approval.

Divestiture process

- From the date of an order or the CMA accepting undertakings from ICE, ICE will be required to complete the divestiture of Trayport to a suitable purchaser within [✂], ie the Divestiture Period.
- All of the obligations on ICE under the current Order, including the continued appointment of the Monitoring Trustee, should continue to apply under any order or divestiture undertakings given by ICE and accepted by the CMA, until the legal completion of the divestiture.
- The Monitoring Trustee's current reporting obligations will be expanded to provide the CMA with regular updates on the progress of the divestiture process.
- A Divestiture Trustee will be appointed if the CMA reasonably believes that there is a risk that the divestiture process would be delayed or fail to complete within the agreed timescales.
- This divestiture will be accompanied by obligations on ICE not to re-acquire Trayport (in whole or in part) for a period of 10 years from the completion date.

New Agreement

- The New Agreement should be terminated, and it should be at the discretion of the new owner of Trayport to decide if it wishes to negotiate an agreement with ICE whether as part of the divestiture process or at a future date.
- For the avoidance of doubt, following the termination of the New Agreement, ICE would not be under any obligation under this remedy to enter into negotiations with the new owner of Trayport.