quality impacts, and no impacts to historic and cultural resources from the proposed action. Therefore, there are no significant non-radiological environmental impacts associated with the proposed action.

Accordingly, the NRC concludes that there are no significant environmental impacts associated with the proposed action.

Environmental Impacts of the Alternatives to the Proposed Action

As an alternative to the proposed action, the NRC staff considered denial of the proposed action (*i.e.,* the ''no-action'' alternative). Denial of the proposed action would result in no change in current environmental impacts. The environmental impacts of the proposed action and the alternative action are similar.

Alternative Use of Resources

There are no unresolved conflicts concerning alternative uses of available resources under the proposed action.

Agencies or Persons Consulted

No additional agencies or persons were consulted regarding the environmental impact of the proposed action. On October 28, 2020, the NRC notified the State of New York representative of the EA and FONSI.

III. Finding of No Significant Impact

The requested exemption from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv) would allow HDI to use funds from the NDTs for spent fuel management and site restoration activities, without prior written notification to the NRC. The proposed action would not significantly affect plant safety, would not have a significant adverse effect on the probability of an accident occurring, and would not have any significant radiological or non-radiological impacts. The reason the human environment would not be significantly affected is that the proposed action involves an exemption from requirements that are of a financial or administrative nature and that do not have an impact on the human environment. Consistent with 10 CFR 51.21, the NRC conducted the EA for the proposed action, and this FONSI incorporates by reference the EA included in Section II of this document. Therefore, the NRC concludes that the proposed action will not have significant effects on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

Other than HDI's letter dated February 12, 2020, there are no other environmental documents associated with this review. This document is available for public inspection as indicated in Section I.

Previous considerations regarding the environmental impacts of operating IPEC are described in NUREG–1437, Supplement 38, Volume 1, ''Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Supplement 38 Regarding Indian Point Nuclear Generating Unit Nos. 2 and 3—Final Report, Main Report and Comment Responses,'' dated December 2010 (ADAMS Accession No. ML103350405), and Volume 5, ''Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Supplement 38 Regarding Indian Point Nuclear Generating Unit Nos. 2 and 3—Final,'' dated April 2018 (ADAMS Accession No. ML18107A759).

IV. Availability of Documents

Date	Title	ADAMS Accession No.
5/12/2020	Letter from ENOI to NRC, "Certifications of Permanent Cessation of Power Operations and Permanent Removal of Fuel from the Reactor Vessel, Indian Point Nuclear Generating Unit No. 2".	ML20133J902.
2/12/2020	Letter from HDI to NRC, "Request for Exemptions from 10 CFR 50.82(a)(8)(i)(A) and 10 CFR 50.75(h)(1)(iv)".	ML20043C539.
12/19/2019	Letter from HDI to NRC, "Post Shutdown Decommissioning Activities Report including Site-Specific Decommissioning Cost Estimate for Indian Point Nuclear Generating Units 1, 2, and 3".	ML19354A698.
11/21/2019	Letter from ENOI to NRC, "Application for Order Consenting to Transfers of Control of Licenses and Approving Conforming License Amendments".	ML19326B953.
4/2018	NUREG–1437, Supplement 38, Volume 5, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 38, Regarding Indian Point Nuclear Generating Unit Nos. 2 and 3—Final".	ML18107A759.
2/8/2017	Letter from ENOI to NRC, "Notification of Permanent Cessation of Power Operations, Indian Point Nuclear Generating Unit Nos. 2 and 3".	ML17044A004.
12/2010	NUREG–1437, Supplement 38, Volume 1, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 38, Regarding Indian Point Nuclear Generating Unit Nos. 2 and 3—Final Report, Main Report and Comment Responses".	ML103350405.

Dated: November 5, 2020.

For the Nuclear Regulatory Commission.

Richard V. Guzman,

Senior Project Manager, Plant Licensing Branch I, Division of Operating Reactor Licensing, Office of Nuclear Reactor Regulation.

[FR Doc. 2020–24935 Filed 11–9–20; 8:45 am]

BILLING CODE 7590–01–P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–90333; File No. SR–CBOE–2020–105]

Self-Regulatory Organizations; Cboe Exchange, Inc.; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change To Amend Its Fees Schedule in Connection With Migration

November 4, 2020.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (the ''Act''),[1] and Rule 19b–4 thereunder,[2] notice is hereby given that on October 23, 2020, Cboe Exchange, Inc. (the ''Exchange'' or ''Cboe Options'') filed with the Securities and Exchange Commission (the ''Commission'') the proposed rule change as described in Items I, II and III below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of the Substance of the Proposed Rule Change

Cboe Exchange, Inc. (the ''Exchange'' or ''Cboe Options'') proposes to amend

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

its Fees Schedule in connection with migration. The text of the proposed rule change is provided in Exhibit 5.[3]

The text of the proposed rule change is also available on the Exchange's website (*http://www.cboe.com/AboutCBOE/CBOELegalRegulatoryHome.aspx*), at the Exchange's Office of the Secretary, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

In 2016, the Exchange's parent company, Cboe Global Markets, Inc. (formerly named CBOE Holdings, Inc.) (''Cboe Global''), which is also the parent company of Cboe C2 Exchange, Inc. (''C2''), acquired Cboe EDGA Exchange, Inc. (''EDGA''), Cboe EDGX Exchange, Inc. (''EDGX'' or ''EDGX Options''), Cboe BZX Exchange, Inc. (''BZX'' or ''BZX Options''), and Cboe BYX Exchange, Inc. (''BYX'' and, together with Cboe Options, C2, EDGX, EDGA, and BZX, the ''Affiliated Exchanges''). The Cboe Affiliated Exchanges recently aligned certain system functionality, including with respect to connectivity, retaining only intended differences between the Affiliated Exchanges, in the context of a technology migration. The Exchange migrated its trading platform to the same system used by the Affiliated Exchanges, which the Exchange completed on October 7, 2019 (the ''migration''). As a result of this migration, the Exchange's pre-migration connectivity architecture was rendered obsolete, and as such, the Exchange now offers new functionality, including new logical connectivity, and therefore proposes to adopt corresponding fees.[4] In determining the proposed fee changes, the Exchange assessed the impact on market participants to ensure that the proposed fees would not create an undue financial burden on any market participants, including smaller market participants. While the Exchange has no way of predicting with certainty the impact of the proposed changes, the Exchange had anticipated its post-migration connectivity revenue[5] to be approximately 1.75% lower than connectivity revenue pre-migration.[6] In addition to providing a consistent technology offering across the Cboe Affiliated Exchanges, the migration also provided market participants a latency equalized infrastructure, improved system performance, and increased sustained order and quote per second capacity, as discussed more fully below. Accordingly, in connection with the migration and in order to more closely align the Exchange's fee structure with that of its Affiliated Exchanges, the Exchange intends to update and simplify its fee structure with respect to access and connectivity and adopt new access and connectivity fees.

The Exchange initially filed the proposed fee changes on October 1, 2019 (SR–CBOE–2019–077) (the ''Original Filing'').[7] The Commission received only one comment letter on the Original Filing, six days after the comment period deadline ended.[8] On November 29, 2019, the Exchange withdrew the Original Filing and submitted SR–CBOE–2019–111 (''Second Proposed Rule Change'').[9] Among other things, the Second Proposed Rule Change was filed in response to, and addressed, the Commission's request for inclusion of the following information: Clarity as to what revenue streams are included in the Exchange's calculation of

[3] The Exchange notes that subsequent to the Original Filing that proposed these changes on October 1 and 2, 2019 (SR–CBOE–2019–077 and SR–CBOE–2019–082) and subsequent to the Second Proposed Rule Change and Third Proposed Rule Change Filings that proposed these changes on November 29, 2019 (SR–CBOE–2019–111) and January 28, 2020 (SR–CBOE–2020–005), the Exchange submitted SR–CBOE–2020–021 which adopted Footnote 12. Footnote 12 governs pricing changes in the event the Exchange trading floor becomes inoperable and is appended to the Market-Maker Tier Appointment Fees and Floor Broker Trading Permit Sliding Scales tables. Additionally, subsequent to the Fourth Proposed Rule Change filed on March 27, 2020 (SR–CBOE–2020–028), the Exchange submitted SR–CBOE–2020–044, which appended Footnotes 41 to the Market maker Tier Appointment Fees table and the Floor Broker Trading Surcharge. Subsequent to the Exchange's Fifth Proposed Rule Change filed on May 22, 2020 (SR–CBOE–2020–48), the Exchange submitted (1) SR–CBOE–2020–058, which adopted new Footnote 24, appended Footnote 24 in the Market-Maker Tier Appointment Fees table and Floor Trading Permit Sliding Scales Table, as well as added language to the Floor Broker ADV Discount Table and (2) SR–CBOE–2020–061 which added further language in Footnote 24. Lastly, subsequent to the Seventh Proposed Rule Change filed on September 2, 2020, the Exchange submitted SR–CBOE–2020–097 which amended language in Footnote 24. The additions proposed by filings SR–CBOE–2020–021, SR–CBOE–2020–044, SR–CBOE–2020–058, SR–CBOE–2020–061 and SR–CBOE–2020–097 are double underlined in Exhibit 5A.

[4] As of October 7, 2019, market participants no longer have the ability to connect to the old Exchange architecture.

[5] Connectivity revenue post-migration includes revenue from physical port fees (other than for disaster recovery), Cboe Data Services Port Fee, logical port fees, Trading Permit Fees, Market-Maker EAP Appointment Unit fees, Tier Appointment Surcharges and Floor Broker Trading Surcharges, less the Floor Broker ADV discounts and discounts on BOE Bulk Ports via the Affiliate Volume Plan and the Market-Maker Access Credit program.

[6] For February 2020, the Exchange's connectivity revenue was approximately 2.5% higher than connectivity revenue pre-migration. For purposes of a fair comparison of the Exchange's initial projection of post-migration connectivity revenue to realized post-migration revenue connectivity, the Exchange excluded from the February 2020 calculation revenue from a Trading Permit Holder who became a Market-Maker post October 7, 2019, a Trading Permit Holder that grew it's footprint on the Exchange significantly, and revenue derived from incremental usage in light of the extreme volatility and volume experienced in February, as such circumstances were not otherwise anticipated or incorporated into the Exchange's original projection. As noted, the Exchange had no way of predicting with certainty the impact of the proposed changes, nor control over choices market participants ultimately decided to make. The Exchange notes connectivity revenue was higher than anticipated in part due to (1) a higher number of 10 Gb Physical Ports being maintained by TPHs than expected (although 34% of Trading Permit Holders maintained the same number of 10 Gb Physical and 44% reduced the amount of 10 Gb Physical Ports maintained), (2) a higher quantity of BOE/FIX Logical Ports being purchased than predicted, and (3) a significantly higher quantity of the optional Drop, GRP, Multicast PITCH/Top Spin Server Ports and Purge Ports being purchased than predicted. For April 2020, the Exchange's connectivity revenue was approximately 21.97% *less* than connectivity revenue pre-migration using the same calculation. For May 2020, the Exchange's connectivity revenue was approximately 22.32% *less* than connectivity revenue pre-migration using the same calculation. The Exchange notes that due to the closure of its trading floor on March 16, 2020 through June 15, 2020, it adopted a number of corresponding temporary pricing changes, including waiving floor Trading Permit fees. *See* Cboe Options Fees Schedule. The Exchange also notes that it has provided the dollar amounts of the Exchange's monthly connectivity revenue to the Securities and Exchange Commission (the ''Commission'') for the months of February–June 2020 with a confidential treatment request. The Exchange also intends to provide further information to the Commission relating to monthly connectivity revenue for additional months, which will also be subject to a confidential treatment request.

[7] On business date October 2, 2019, due to a technical error, the Exchange withdrew that filing and submitted SR–CBOE–2019–082. *See* Securities Exchange Act Release No. 87304 (October 15, 2019), 84 FR 56240, (October 21, 2019) (''Original Filing'').

[8] *See* Letter from Tyler Gellasch, Executive Director, The Healthy Markets Association (''Healthy Markets''), to Vanessa Countryman, Secretary, Commission, dated November 18, 2019.

[9] *See* Securities Exchange Act Release No. 87727 (December 12, 2019), 84 FR 69428 (December 18, 2019).

''connectivity'' revenue; an update on post-migration connectivity revenue; [10] further information regarding the Exchange's new latency equalized infrastructure including additional detail regarding the benefits of such structure; clarity on how the Cboe Data Services Port fee is applied; data regarding the number of market participants that connect directly versus indirectly and the volume attributed to each; enhanced discussion regarding products that compete with exclusively listed products; an update on whether any market participant terminated their direct connectivity or membership post-migration (and whether it was because of the fee changes); and generally provide an update on various projections made in the filing, including how many ports market participants purchased post-migration, how many Trading Permit Holders were paying higher or lower fees, and how many Trading Permit Holders achieved proposed incentive tiers. The Commission received no comment letters on the Second Proposed Rule Change.

On January 28, 2020, the Exchange withdrew the Second Proposed Rule Change filing and submitted SR–CBOE–2020–005 (''Third Proposed Rule Change'').[11] The Third Proposed Rule Change was filed in response to, and addressed, the Commission's request for further discussion regarding how competitive forces constrained fees, further detail on potential substitute products for the Exchange's exclusively listed products, updated data on the number of ports purchased post-migration and an update on the projected post-migration connectivity revenue.[12] The Exchange also provided updated data on how many Trading Permit Holders connected directly versus indirectly to the Exchange and the volume attributed to each. The Commission received no comment letters on the Third Proposed Rule Change.

On March 27, 2020, the Exchange submitted SR–CBOE–2020–028 (''Fourth Proposed Rule Change'').[13] The Fourth Proposed Rule Change was filed in response to the Commission's sole request to update the connectivity revenue collected in February 2020, as the transition of physical ports had been completed. The Commission received only one comment letter on the Fourth Proposed Rule Change.[14]

On May 21, 2020, the Exchange withdrew that filing and submitted SR–CBOE–20202–048 (''Fifth Proposed Rule Change'').[15] The Fifth Proposed Rule Change was filed in response to the Commission's request for (1) updated connectivity revenue for April 2020, (2) examples of alternative products to VIX and (3) any further evidence the Exchange had to support its argument that competitive forces constrain pricing. The Commission received no comments letters on the Fifth Proposed Rule Change.

On July 2, 2020, the Exchange withdrew the Fifth Proposed Rule Change and submitted SR–CBOE–2020–064 (''Sixth Proposed Rule Change'').[16] The Sixth Proposed Rule Change was filed to respond to the Commission's request for another update on the Exchange's post-migration connectivity revenue and to provide further data demonstrating competition in the marketplace. The Commission again received no negative comments letters on the Sixth Proposed Rule Change. Notably however, the Exchange did receive three positive comment letters on the Sixth Proposed Rule Change (one from a market-maker TPH and two from floor broker TPHs), each noting that the TPHS believes the proposed fees are reasonable and encouraging the Commission to allow the fees to remain effective and avoid an unnecessary suspension and disapproval proceeding.[17]

On August 31, 2020, the Exchange withdrew the Sixth Proposed Rule Change and submitted SR–CBOE–2020–083 (''Seventh Proposed Rule Change'').[18] The Seventh Proposed Rule Change was filed in order to respond to an additional request from the Commission for further information and dialog. The Commission received only one comment letter on the Seventh Proposed Rule Change, which was submitted from the same industry participant that commented on this proposed rule change on two previous occasions and that frequently submits negative comment letters on exchange fee filings.[19]

Today, the Exchange is withdrawing the Seventh Proposed Rule change and submitting this filing (''Eighth Proposed Rule Change''), as part of its ongoing efforts to adopt the post-migration connectivity fees and to respond to the Commission's most recent and most extensive request for further information, including among other things: (1) Total connectivity and access fee revenues over a period of time, (2) data relating to each TPH that has connected directly to the Exchange over a period of time (including contract volume and access and connectivity fees paid on a month-by-month and firm-by-firm basis), (3) information relating to previous access and connectivity pricing changes that have been proposed; and (4) information relating to the Exchange's profit margins and return on assets for each of Cboe's business lines.[20]

The Exchange notes the proposed fees have been effective, and thus have been paid by Trading Permit Holders, for over

[10] Many market participants were still transitioning to the new connectivity structure at that time and as such, the Exchange noted it did not expect its connectivity revenue projections regarding port purchases to be realized prior to February 2020.

[11] *See* Securities Exchange Act Release No. 88164 (February 11, 2020), 85 FR 8897, (February 18, 2020).

[12] Many market participants were still transitioning to the new connectivity structure at that time and as such, the Exchange again noted it did not expect its connectivity revenue projections regarding port purchases to be realized prior to February 2020.

[13] *See* Securities Exchange Act Release No. 88586 (April 8, 2020), 85 FR 20773, (April 14, 2020).

[14] *See* Letter from Tyler Gellasch, Executive Director, The Healthy Markets Association (''Healthy Markets''), to Vanessa Countryman, Secretary, Commission, dated May 5, 2020, which letter mischaracterized the Exchange's proposed fees as linking market data costs to trading volume, among other factual inaccuracies.

[15] The Exchange refiled the Fifth Proposed Rule Change on May 22, 2020 due to a technical error (SR–CBOE–2020–048). *See* Securities Exchange Act Release No. 88984 (June 1, 2020), 85 FR 34670, (June 6, 2020).

[16] *See* Securities Exchange Act Release No. 89239 (July 7, 2020), 85 FR 42042, (July 13, 2020).

[17] *See* Letters from Steve Crutchfield, Head of Market Structure, Chicago Trading Company (''CTC'') and William Ellington, Managing Member/CEO, X-Change Financial Access (''XFA'') to Vanessa Countryman, Secretary, Commission, dated August 27, 2020. *See also* Letter from Lakeshore Securities to Vanessa Countryman, Secretary, Commission, dated August 31, 2020.

[18] The Exchange refiled the Seventh Proposed Rule Change on September 2, 2020 due to a technical error (SR–CBOE–2020–086). *See* Securities Exchange Act Release No. 89826 (September 10, 2020), 85 FR 57900, (September 16, 2020).

[19] *See* Letter from Tyler Gellasch, Executive Director, The Healthy Markets Association (''Healthy Markets''), to Vanessa Countryman, Secretary, Commission, dated September 30, 2020, which letter, like the first two Healthy Markets comment letters, consists of a number of conclusory statements and mischaracterizes the Exchange's proposed fees as linking market data costs to trading volume, among other factual inaccuracies.

[20] Data responsive to the Commission's request for additional information is being provided to the Commission with a confidential treatment request. The Exchange notes that it is unable to provide data addressing the Commission's request for information relating to its profit margins and return on assets, as its costs are not kept in the disaggregated manner requested by the Commission. The Exchange notes that to disaggregate its cost in that way would require an artificial and arbitrary division resulting in inaccurate and potentially meaningless data. Moreover, the Exchange notes that it did not raise any arguments relating to its profitability nor is it required to do so in order to demonstrate that its fees are reasonable and consistent with the Act.

one year. The Exchange believes it is notable that during this time no other industry group or exchange, and particularly no market participants who connect to the Exchange, have claimed in comment letters to the Commission that the Exchange's new fee structure is unreasonable. The Exchange also believes it's significant and notable that, in addition to positive feedback regarding the improved connectivity under the new structure, it received feedback from a number of market participants that the Exchange's proposed fee changes are regarded as reasonable, both informally via conversations with the firms and formally via the comment letters submitted in support of this fee change.

As discussed herein, the Exchange believes that the proposed changes are consistent with the Act because they are reasonable, equitably allocated, not unfairly discriminatory, and not an undue burden on competition, as they are are supported by evidence (including data and analysis) and are constrained by significant competitive forces. The Exchange also believes the proposed fees are reasonable as they are in line with the amounts assessed by other exchanges for similar connectivity offerings. Additionally, the Exchange believes the proposed changes are consistent with the SEC Division of Trading and Markets (the ''Division'') issued non-rulemaking fee filing guidance titled ''Staff Guidance on SRO Rule Filings Relating to Fees'' (''Fee Guidance'') issued on May 21, 2020.[21] Accordingly, the Exchange believes that the Commission should find that the Proposed Fee Increases are consistent with the Act. The proposed rule change is immediately effective upon filing with the Commission pursuant to Section 19(b)(3)(A) of the Act.

Physical Connectivity

A physical port is utilized by a Trading Permit Holder (''TPH'') or non-TPH to connect to the Exchange at the data centers where the Exchange's servers are located. The Exchange currently assesses fees for Network Access Ports for these physical connections to the Exchange. Specifically, TPHs and non-TPHs can elect to connect to Cboe Options' trading system via either a 1 gigabit per second (''Gb'') Network Access Port or a 10 Gb Network Access Port. Pre-migration the Exchange assessed a monthly fee of $1,500 per port for 1 Gb Network Access Ports and a monthly fee of $5,000 per port for 10 Gb Network Access Ports for access to Cboe Options primary system. Through January 31, 2020, Cboe Options market participants will continue to have the ability to connect to Cboe Options' trading system via the current Network Access Ports. As of October 7, 2019, in connection with the migration, TPHs and non-TPHs may alternatively elect to connect to Cboe Options via new latency equalized Physical Ports.[22] The new Physical Ports similarly allow TPHs and non-TPHs the ability to connect to the Exchange at the data center where the Exchange's servers are located and TPHs and non-TPHs have the option to connect via 1 Gb or 10 Gb Physical Ports. As noted above, both the new 1 Gb and 10 Gb Physical Ports provide latency equalization, meaning that each market participant will be afforded the same latency for 1 Gb or 10 Gb Physical Ports in the primary data center to the Exchange's customer-facing switches regardless of location of the market participant's cage[23] in the primary data center relative to the Exchange's servers. Conversely, the legacy Network Access Ports are not latency equalized, meaning the location of a market participant's cage within the data center may affect latency. For example, in the legacy system, a cage located further from the Exchange's servers may experience higher latency than those located closer to the Exchange's servers.[24] As such, the proposed Physical Ports ensure all market participants connected to the Exchange via the new Physical Ports will receive the same respective latency for each port size and ensure that no market participant has a latency advantage over another market participant within the primary data center.[25] Additionally, the new infrastructure utilizes new and faster switches resulting in lower overall latency.

The Exchange proposes to assess the following fees for any physical port, regardless of whether the TPH or non-TPH connects via the current Network Access Ports or the new Physical Ports. Specifically, the Exchange proposes to continue to assess a monthly fee of $1,500 per port for 1 Gb Network Access Ports and new Physical Ports and increase the monthly fee for 10 Gb Network Access Ports and new Physical Ports to $7,000 per port. Physical port fees will be prorated based on the remaining trading days in the calendar month. The proposed fee for 10 Gb Physical Ports is in line with the amounts assessed by other exchanges for similar connections by its Affiliated Exchanges and other Exchanges that utilize the same connectivity infrastructure.[26]

In addition to the benefits resulting from the new Physical Ports providing latency equalization and new switches (*i.e.,* improved latency), TPHs and non-TPHs may be able to reduce their overall physical connectivity fees. Particularly, Network Access Port fees are assessed for unicast (orders, quotes) and multicast (market data) connectivity separately. More specifically, Network Access Ports may only receive one type of connectivity each (thus requiring a market participant to maintain two ports if that market participant desires both types of connectivity). The new Physical Ports however, allow access to both unicast and multicast connectivity with a single physical connection to the

[21] Where possible, the Exchange is including numerical examples and percentages, including with respect to revenue impact. In addition, the Exchange is providing data to the Commission in support of its arguments herein, which is consistent with the Fee Guidance. The non-rulemaking Fee Guidance covers all aspects of a fee filing, but as acknowledged by the Commission, has ''no legal force or effect'', is ''not a rule, regulation or statement of the Commission'', does not ''alter or amend applicable law'' and ''creates no new or additional obligations for SROs and the Commission.'' *See* Chairman Jay Clayton, Statement on Division of Trading and Markets Staff Fee Guidance, June 12, 2019. The Exchange nonetheless has extensively addressed the Fee Guidance throughout this filing and prior versions of this filing.

[22] As previously noted, market participants will continue to have the option of connecting to Cboe Options via a 1 Gbps or 10 Gbps Network Access Port at the same rates as proposed, respectively.

[23] A market participant's ''cage'' is the cage within the data center that contains a market participant's servers, switches and cabling.

[24] The Exchange equalizes physical connectivity in the data center for its primary system by taking the farthest possible distance that a Cboe market participant cage may exist from the Exchange's customer-facing switches and using that distance as the cable length for any cross-connect.

[25] The Exchange notes that 10 Gb Physical Ports have an 11 microsecond latency advantage over 1 Gb Physical Ports. Other than this difference, there are no other means to receive a latency advantage as compared to another market participant in the new connectivity structure.

[26] *See* Cboe EDGA U.S. Equities Exchange Fee Schedule, Physical Connectivity Fees; Cboe EDGX U.S. Equities Exchange Fee Schedule, Physical Connectivity Fees; Cboe BZX U.S. Equities Exchange Fee Schedule, Physical Connectivity Fees; Cboe BYX U.S. Equities Exchange Fee Schedule, Physical Connectivity Fees; Cboe EDGX Options Exchange Fee Schedule, Physical Connectivity Fees; and Cboe BZX Options Exchange Fee Schedule, Physical Connectivity Fees (collectively, ''Affiliated Exchange Fee Schedules''). *See e.g.,* Nasdaq PHLX and ISE Rules, General Equity and Options Rules, General 8. Phlx and ISE each charge a monthly fee of $2,500 for each 1Gb connection, $10,000 for each 10Gb connection and $15,000 for each 10Gb Ultra connection. *See also* Nasdaq Price List—Trading Connectivity. Nasdaq charges a monthly fee of $7,500 for each 10Gb direct connection to Nasdaq and $2,500 for each direct connection that supports up to 1Gb. *See also* NYSE American Fee Schedule, Section V.B, and Arca Fees and Charges, Co-Location Fees. NYSE American and Arca each charge a monthly fee of $5,000 for each 1Gb circuit, $14,000 for each 10Gb circuit and $22,000 for each 10Gb LX circuit.

Exchange. Therefore, TPHs and non-TPHs that currently purchase two legacy Network Access Ports for the purpose of receiving each type of connectivity now have the option to purchase only one new Physical Port to accommodate their connectivity needs, which may result in reduced costs for physical connectivity.[27]

Cboe Data Services—Port Fees

The Exchange proposes to amend the ''Port Fee'' under the Cboe Data Services (''CDS'') Fees Schedule. Currently, the Port Fee is payable by any Customer [28] that receives data through two types of sources; a direct connection to CDS (''direct connection'') or through a connection to CDS provided by an extranet service provider (''extranet connection''). The Port Fee applies to receipt of any Cboe Options data feed but is only assessed once per data port. The Exchange proposes to amend the monthly CDS Port Fee to provide that it is payable ''per source'' used to receive data, instead of ''per data port''. The Exchange also proposes to increase the fee from $500 per data port/month to $1,000 per data source/month.[29] The Exchange notes the proposed change in assessing the fee (*i.e.,* per source vs per port) and the proposed fee amount are the same as the corresponding fee on its affiliate C2.[30]

In connection with the proposed change, the Exchange also proposes to rename the ''Port Fee'' to ''Direct Data Access Fee''. As the fee will be payable ''per data source'' used to receive data, instead of ''per data port'', the Exchange believes the proposed name is more appropriate and that eliminating the term ''port'' from the fee will eliminate confusion as to how the fee is assessed.

Logical Connectivity

Next, the Exchange proposes to amend its login fees. By way of background, Cboe Options market participants were able to access Cboe Command via either a CMI or a FIX Port, depending on how their systems are configured. Effective October 7, 2019, market participants are no longer able to use CMI and FIX Login IDs. Rather, the Exchange utilizes a variety of logical connectivity ports as further described below. Both a legacy CMI/FIX Login ID and logical port represent a technical port established by the Exchange within the Exchange's trading system for the delivery and/or receipt of trading messages—*i.e.,* orders, accepts, cancels, transactions, etc. Market participants that wish to connect directly to the Exchange can request a number of different types of ports, including ports that support order entry, customizable purge functionality, or the receipt of market data. Market participants can also choose to connect indirectly through a number of different third-party providers, such as another broker-dealer or service bureau that the Exchange permits through specialized access to the Exchange's trading system and that may provide additional services or operate at a lower mutualized cost by providing access to multiple members. In light of the discontinuation of CMI and FIX Login IDs, the Exchange proposes to eliminate the fees associated with the CMI and FIX login IDs and adopt the below pricing for logical connectivity in its place.

Service	Cost per month
Logical Ports (BOE, FIX) 1 to 5.	$750 per port.
Logical Ports (BOE, FIX) >5.	$800 per port.
Logical Ports (Drop) ..	$750 per port.
BOE Bulk Ports 1 to 5.	$1,500 per port.
BOE Bulk Ports 6 to 30.	$2,500 per port.
BOE Bulk Ports >30 ..	$3,000 per port.
Purge ports	$850 per port.
GRP Ports	$750/primary (A or C Feed).
Multicast PITCH/Top Spin Server Ports.	$750/set of primary (A or C feed).

The Exchange proposes to provide for each of the logical connectivity fees that new requests will be prorated for the first month of service. Cancellation requests are billed in full month increments as firms are required to pay for the service for the remainder of the month, unless the session is terminated within the first month of service. The Exchange notes that the proration policy is the same on its Affiliated Exchanges.[31]

Logical Ports (BOE, FIX, Drop): The new Logical Ports represent ports established by the Exchange within the Exchange's system for trading purposes. Each Logical Port established is specific to a TPH or non-TPH and grants that TPH or non-TPH the ability to operate a specific application, such as order/quote [32] entry (FIX and BOE Logical Ports) or drop copies (Drop Logical Ports). Similar to CMI and FIX Login IDs, each Logical Port will entitle a firm to submit message traffic of up to specified number of orders per second.[33] The Exchange proposes to assess $750 per port per month for all Drop Logical Ports and also assess $750 per port per month (which is the same amount currently assessed per CMI/FIX Login ID per month), for the first 5 FIX/BOE Logical Ports and thereafter assess $800 per port, per month for each additional FIX/BOE Logical Port. While the proposed ports will be assessed the same monthly fees as current CMI/FIX Login IDs (for the first five logical ports), the proposed logical ports provide for significantly more message traffic (and thus cost less per message sent) as shown below:

[27] The Exchange proposes to eliminate the current Cboe Command Connectivity Charges table in its entirety and create and relocate such fees in a new table in the Fees Schedule that addresses fees for physical connectivity, including fees for the current Network Access Ports, the new Physical Ports and Disaster Recovery (''DR'') Ports. The Exchange notes that it is not proposing any changes with respect to DR Ports other than renaming the DR ports from ''Network Access Ports'' to ''Physical Ports'' to conform to the new Physical Port terminology. The Exchange also notes that subsequent to the initial filings that proposed these fee changes on October 1 and 2, 2019 (SR–CBOE–2019–077 and SR–CBOE–2019–082), the Exchange amended the proposed port fees to waive fees for ports used for PULSe in filing No. SR–CBOE–2019–105. The additions proposed by filing SR–CBOE–2019–105 are double underlined in Exhibit 5A and the deletions are doubled bracketed in Exhibit 5A.

[28] A Customer is any person, company or other entity that, pursuant to a market data agreement with CDS, is entitled to receive data, either directly from CDS or through an authorized redistributor (*i.e.,* a Customer or extranet service provider), whether that data is distributed externally or used internally.

[29] For example, under the pre-migration ''per port'' methodology, if a TPH maintained 4 ports that receive market data, that TPH would be assessed $2,000 per month (*i.e.,* $500 × 4 ports), regardless of how many sources it used to receive data. Under the proposed ''per source'' methodology, if a TPH maintains 4 ports that receive market data, but receives data through only one source (*e.g.,* a direct connection) that TPH would be assessed $1,000 per month (*i.e.,* $1000 × 1 source). If that TPH maintains 4 ports but receives data from both a direct connection and an extranet connection, that TPH would be assessed $2,000 per month (*i.e.,* $1,000 × 2 sources). Similarly, if that TPH maintains 4 ports and receives data from two separate extranet providers, that TPH would be assessed $2,000 per month (*i.e.,* $1,000 × 2).

[30] *See* Cboe C2 Options Exchange Fee Schedule, Cboe Data Services, LLC Fees, Section IV, Systems Fees.

[31] *See* Affiliated Exchange Fee Schedules, Logical Port Fees.

[32] As of October 7, 2019, the definition of quote in Cboe Options Rule 1.1 means a firm bid or offer a Market-Maker (a) submits electronically as an order or bulk message (including to update any bid or offer submitted in a previous order or bulk message) or (b) represents in open outcry on the trading floor.

[33] Login Ids restrict the maximum number of orders and quotes per second in the same way logical ports do, and Users may similarly have multiple logical ports as they may have Trading Permits and/or bandwidth packets to accommodate their order and quote entry needs.

[34] Each Login ID has a bandwidth limit of 80,000 quotes per 3 seconds. However, in order to place such bandwidth onto a single Login ID, a TPH or non-TPH would need to purchase a minimum of 15

	CMI/FIX login Ids		BOE/FIX logical ports
	Quotes	Orders	Quotes/orders
Bandwidth Limit per login	5,000 quotes/3 sec [34]	30 orders/sec	15,000 quotes/orders/3 sec.
Cost	$750 each	$750 each	$750/$800 each.
Cost per Quote/Order Sent @Limit	$0.15 per quote/3 sec	$25.00 per order/sec	$0.05/$0.053 per quote/order/3 sec.

Logical Port fees will be limited to Logical Ports in the Exchange's primary data center and no Logical Port fees will be assessed for redundant secondary data center ports. Each BOE or FIX Logical Port will incur the logical port fee indicated in the table above when used to enter up to 70,000 orders per trading day per logical port as measured on average in a single month. Each incremental usage of up to 70,000 per day per logical port will incur an additional logical port fee of $800 per month. Incremental usage will be determined on a monthly basis based on the average orders per day entered in a single month across all of a market participant's subscribed BOE and FIX Logical Ports. The Exchange believes that the pricing implications of going beyond 70,000 orders per trading day per Logical Port encourage users to mitigate message traffic as necessary. The Exchange notes that the proposed fee of $750 per port is the same amount assessed not only for current CMI and FIX Login Ids, but also similar ports available on an affiliate exchange.[35]

The Exchange also proposes to provide that the fee for one FIX Logical Port connection to PULSe and one FIX Logical Port connection to Cboe Silexx will be waived per TPH. The Exchange notes that only one FIX Logical Port connection is required to support a firm's access through each of PULSe and Cboe Silexx FLEX.

BOE Bulk Logical Ports: The Exchange also offers BOE Bulk Logical Ports, which provide users with the ability to submit single and bulk order messages to enter, modify, or cancel orders designated as Post Only Orders with a Time-in-Force of Day or GTD with an expiration time on that trading day. While BOE Bulk Ports will be available to all market participants, the Exchange anticipates they will be used primarily by Market-Makers or firms that conduct similar business activity, as the primary purpose of the proposed bulk message functionality is to encourage market-maker quoting on exchanges. As indicated above, BOE Bulk Logical Ports are assessed $1,500 per port, per month for the first 5 BOE Bulk Logical Ports, assessed $2,500 per port, per month thereafter up to 30 ports and thereafter assessed $3,000 per port, per month for each additional BOE Bulk Logical Port. Like CMI and FIX Login IDs, and FIX/BOX Logical Ports, BOE Bulk Ports will also entitle a firm to submit message traffic of up to specified number of quotes/orders per second.[36] The proposed BOE Bulk ports also provide for significantly more message traffic (and thus cost less per message sent) as compared to current CMI/FIX Login IDs, as shown below:

	CMI/FIX Login Ids	BOE Bulk Ports
	Quotes	Quotes [37]
Bandwidth Limit	5,000 quotes/3 sec [38]	225,000 quotes 3 sec.
Cost	$750 each	$1,500/$2,500/$3,000 each.
Cost per Quote/Order Sent @Limit	$0.15	$0.006/$0.011/$0.013
	per quote/3 sec	per quote/3 sec.

Each BOE Bulk Logical Port will incur the logical port fee indicated in the table above when used to enter up to 30,000,000 orders per trading day per logical port as measured on average in a single month. Each incremental usage of up to 30,000,000 orders per day per BOE Bulk Logical Port will incur an additional logical port fee of $3,000 per month. Incremental usage will be determined on a monthly basis based on the average orders per day entered in a single month across all of a market participant's subscribed BOE Bulk Logical Ports. The Exchange believes that the pricing implications of going beyond 30,000,000 orders per trading day per BOE Bulk Logical Port encourage users to mitigate message traffic as necessary. The Exchange notes that the proposed BOE Bulk Logical Port fees are similar to the fees assessed for these ports by BZX Options.[39]

Purge Ports: As part of the migration, the Exchange introduced Purge Ports to provide TPHs additional risk management and open order control functionality. Purge ports were designed to assist TPHs, in the management of, and risk control over, their quotes, particularly if the TPH is dealing with a large number of options. Particularly, Purge Ports allow TPHs to submit a cancelation for all open orders, or a subset thereof, across multiple sessions under the same Executing Firm ID (''EFID''). This would allow TPHs to seamlessly avoid unintended executions, while continuing to evaluate the direction of the market. While Purge Ports are available to all market participants, the Exchange anticipates they will be used primarily by Market-Makers or firms that conduct similar business activity and are therefore

Market-Maker Permits or Bandwidth Packets (each Market-Maker Permit and Bandwidth Packet provides 5,000 quotes/3 sec). For purposes of comparing ''quote'' bandwidth, the provided example assumes only 1 Market-Maker Permit or Bandwidth Packet has been purchased.

[35] *See* Cboe BZX Options Exchange Fee Schedule, Options Logical Port Fees.

[36] The Exchange notes that while technically there is no bandwidth limit per BOE Bulk Port, there may be possible performance degradation at 15,000 messages per second (which is the equivalent of 225,000 quotes/orders per 3 seconds). As such, the Exchange uses the number at which performance may be degraded for purposes of comparison.

[37] *See* Cboe Options Rule 1.1.

[38] Each Login ID has a bandwidth limit of 80,000 quotes per 3 seconds. However, in order to place such bandwidth onto a single Login ID, a TPH or non-TPH would need to purchase a minimum of 15 Market-Maker Permits or Bandwidth Packets (each Market-Maker Permit and Bandwidth Packet provides 5,000 quotes/3 sec). For purposes of comparing ''quote'' bandwidth, the provided example assumes only 1 Market-Maker Permit or Bandwidth Packet has been purchased.

[39] *See* Cboe BZX Options Exchange Fee Schedule, Options Logical Port Fees.

exposed to a large amount of risk across a number of securities. The Exchange notes that market participants are also able to cancel orders through FIX/BOE Logical Ports and as such a dedicated Purge Port is not required nor necessary. Rather, Purge Ports were specially developed as an optional service to further assist firms in effectively managing risk. As indicated in the table above, the Exchange proposes to assess a monthly charge of $850 per Purge Port. The Exchange notes that the proposed fee is in line with the fee assessed by other exchanges, including its Affiliated Exchanges, for Purge Ports.[40]

Multicast PITCH/Top Spin Server and GRP Ports: In connection with the migration, the Exchange also offers optional Multicast PITCH/Top Spin Server (''Spin'') and GRP ports and proposes to assess $750 per month, per port. Spin Ports and GRP Ports are used to request and receive a retransmission of data from the Exchange's Multicast PITCH/Top data feeds. The Exchange's Multicast PITCH/Top data feeds are available from two primary feeds, identified as the ''A feed'' and the ''C feed'', which contain the same information but differ only in the way such feeds are received. The Exchange also offers two redundant feeds, identified as the ''B feed'' and the ''D feed.'' All secondary feed Spin and GRP Ports will be provided for redundancy at no additional cost. The Exchange notes a dedicated Spin and GRP Port is not required nor necessary. Rather, Spin ports enable a market participant to receive a snapshot of the current book quickly in the middle of the trading session without worry of gap request limits and GRP Ports were specially developed to request and receive retransmission of data in the event of missed or dropped message. The Exchange notes that the proposed fee is in line with the fee assessed for the same ports on BZX Options.[41]

Access Credits

The Exchange next proposes to amend its Affiliate Volume Plan (''AVP'') to provide Market-Makers an opportunity to obtain credits on their monthly BOE Bulk Port Fees.[42] By way of background, under AVP, if a TPH Affiliate[43] or Appointed OFP[44] (collectively, an ''affiliate'') of a Market-Maker qualifies under the Volume Incentive Program (''VIP'') (*i.e.,* achieves VIP Tiers 2–5), that Market-Maker will also qualify for a discount on that Market-Maker's Liquidity Provider (''LP'') Sliding Scale transaction fees and Trading Permit fees. The Exchange proposes to amend AVP to provide that qualifying Market-Makers will receive a discount on Bulk Port fees (instead of Trading Permits) where an affiliate achieves VIP Tiers 4 or 5. As discussed more fully below, the Exchange is amending its Trading Permit structure, such that off-floor Market-Makers no longer need to hold more than one Market-Maker Trading Permit. As such, in place of credits for Trading Permits, the Exchange will provide credits for BOE Bulk Ports.[45] The proposed credits are as follows:

Market Maker affiliate access credit	VIP tier	Percent credit on monthly BOE bulk port fees
Credit Tier	1	0
	2	0
	3	0
	4	15
	5	25

The Exchange believes the proposed change to AVP continues to allow the Exchange to provide TPHs that have both Market-Maker and agency operations reduced Market-Maker costs via the credits, albeit credits on BOE Bulk Port fees instead of Trading Permit fees. AVP also continues to provide incremental incentives for TPHs to strive for the higher tier levels, which provide increasingly higher benefits for satisfying increasingly more stringent criteria.

In addition to the opportunity to receive credits via AVP, the Exchange proposes to provide an additional opportunity for Market-Makers to obtain credits on their monthly BOE Bulk Port fees based on the previous month's make rate percentage. By way of background, the Liquidity Provider Sliding Scale Adjustment Table provides that Taker fees be applied to electronic ''Taker'' volume and a Maker rebate be applied to electronic ''Maker'' volume, in addition to the transaction fees assessed under the Liquidity Provider Sliding Scale.[46] The amount of the Taker fee (or Maker rebate) is determined by the Liquidity Provider's percentage of volume from the previous month that was Maker (''Make Rate'').[47] Market-Makers are given a Performance Tier based on their Make Rate percentage which currently provides adjustments to transaction fees. Thus, the program is designed to attract liquidity from traditional Market-Makers. The Exchange proposes to now also provide BOE Bulk Port fee credits if Market-Makers satisfy the thresholds of certain Performance Tiers. Particularly, the Performance Tier earned will also determine the percentage credit applied to a Market-Maker's monthly BOE Bulk Port fees, as shown below:

[40] *See e.g.,* Nasdaq ISE Options Pricing Schedule, Section 7(C), Ports and Other Services. *See also* Cboe EDGX Options Exchange Fee Schedule, Options Logical Port Fees; Cboe C2 Options Exchange Fee Schedule, Options Logical Port Fees and Cboe BZX Options Exchange Fee Schedule, Options Logical Port Fees.

[41] *See* Cboe BZX Options Exchange Fee Schedule, Options Logical Port Fees.

[42] As noted above, while BOE Bulk Ports will be available to all market participants, the Exchange anticipates they will be used primarily by Market Makers or firms that conduct similar business activity.

[43] For purposes of AVP, ''Affiliate'' is defined as having at least 75% common ownership between the two entities as reflected on each entity's Form BD, Schedule A.

[44] *See* Cboe Options Fees Schedule Footnote 23. Particularly, a Market-Maker may designate an Order Flow Provider (''OFP'') as its ''Appointed OFP'' and an OFP may designate a Market-Maker to be its ''Appointed Market-Maker'' for purposes of qualifying for credits under AVP.

[45] The Exchange notes that Trading Permits currently each include a set bandwidth allowance and 3 logins. Current logins and bandwidth are akin to the proposed logical ports, including BOE Bulk Ports which will primarily be used by Market-Makers.

[46] *See* Cboe Options Exchange Fees Schedule, Liquidity Provider Sliding Scale Adjustment Table.

[47] More specifically, the Make Rate is derived from a Liquidity Provider's electronic volume the previous month in all symbols excluding Underlying Symbol List A using the following formula: (i) The Liquidity Provider's total electronic automatic execution (''auto-ex'') volume (*i.e.,* volume resulting from that Liquidity Provider's resting quotes or single sided quotes/orders that were executed by an incoming order or quote), divided by (ii) the Liquidity Provider's total auto-ex volume (*i.e.,* volume that resulted from the Liquidity Provider's resting quotes/orders and volume that resulted from that LP's quotes/orders that removed liquidity). For example, a TPH's electronic Make volume in September 2019 is 2,500,000 contracts and its total electronic auto-ex volume is 3,000,000 contracts, resulting in a Make Rate of 83% (Performance Tier 4). As such, the TPH would receive a 40% credit on its monthly Bulk Port fees for the month of October 2019. For the month of October 2019, the Exchange will be billing certain incentive programs separately, including the Liquidity Provider Sliding Scale Adjustment Table, for the periods of October 1–October 4 and October 7–October 31 in light of the migration of its billing system. As such, a Market-Maker's Performance Tier for November 2019 will be determined by the Market-Maker's percentage of volume that was Maker from the period of October 7–October 31, 2019.

Market Maker access credit	Liquidity provider sliding scale adjustment performance tier	Make Rate(% based on prior month)	Percent credit on monthly BOE bulk port fees
Credit Tier	1	0%–50%	0
	2	Above 50%–60%	0
	3	Above 60%–75%	0
	4	Above 75%–90%	40
	5	Above 90%	40

The Exchange believes the proposal mitigates costs incurred by traditional Market-Makers that focus on adding liquidity to the Exchange (as opposed to those that provide and take, or just take). The Exchange lastly notes that both the Market-Maker Affiliate Access Credit under AVP and the Market-Maker Access Credit tied to Performance Tiers can both be earned by a TPH, and these credits will each apply to the total monthly BOE Bulk Port Fees including any incremental BOE Bulk Port fees incurred, before any credits/adjustments have been applied (*i.e.* an electronic MM can earn a credit from 15% to 65%).

Bandwidth Packets

As described above, post-migration, the Exchange utilizes a variety of logical ports. Part of this functionality is similar to bandwidth packets that were previously available on the Exchange. Bandwidth packets restricted the maximum number of orders and quotes per second. Post-migration, market participants may similarly have multiple Logical Ports and/or BOE Bulk Ports as they may have had bandwidth packets to accommodate their order and quote entry needs. As such, the Exchange proposes to eliminate all of the current Bandwidth Packet fees.[48] The Exchange believes that the proposed pricing implications of going beyond specified bandwidth described above in the logical connectivity fees section will be able to otherwise mitigate message traffic as necessary.

CAS Servers

By way of background, in order to connect to the legacy Cboe Command, which allowed a TPH to trade on the Cboe Options System, a TPH had to connect via either a CMI or FIX interface (depending on the configuration of the TPH's own systems). For TPHs that connected via a CMI interface, they had to use CMI CAS Servers. In order to ensure that a CAS Server was not overburdened by quoting activity for Market-Makers, the Exchange allotted each Market-Maker a certain number of CASs (in addition to the shared backups) based on the amount of quoting bandwidth that the Market-Maker had. The Exchange no longer uses CAS Servers, post-migration. In light of the elimination of CAS Servers, the Exchange proposes to eliminate the CAS Server allotment table and extra CAS Server fee.

Trading Permit Fees

By way of background, the Exchange may issue different types of Trading Permits and determine the fees for those Trading Permits.[49] Pre-migration, the Exchange issued the following three types of Trading Permits: (1) Market-Maker Trading Permits, which were assessed a monthly fee of $5,000 per permit; (2) Floor Broker Trading Permits, which were assessed a monthly fee of $9,000 per permit; and (3) Electronic Access Permits (''EAPs''), which were assessed a monthly fee of $1,600 per permit. The Exchange also offered separate Market-Maker and Electronic Access Permits for the Global Trading Hours (''GTH'') session, which were assessed a monthly fee of $1,000 per permit and $500 per permit respectively.[50] For further color, a Market-Maker Trading Permit entitled the holder to act as a Market-Maker, including a Market-Maker trading remotely, DPM, eDPM, or LMM, and also provided an appointment credit of 1.0, a quoting and order entry bandwidth allowance, up to three logins, trading floor access and TPH status.[51] A Floor Broker Trading Permit entitled the holder to act as a Floor Broker, provided an order entry bandwidth allowance, up to 3 logins, trading floor access and TPH status.[52] Lastly, an EAP entitled the holder to electronic access to the Exchange. Holders of EAPs must have been broker-dealers registered with the Exchange in one or more of the following capacities: (a) Clearing TPH, (b) TPH organization approved to transact business with the public, (c) Proprietary TPHs and (d) order service firms. The permit did not provide access to the trading floor. An EAP also provided an order entry bandwidth allowance, up to 3 logins and TPH status.[53] The Exchange also provided an opportunity for TPHs to pay reduced rates for Trading Permits via the Market Maker and Floor Broker Trading Permit Sliding Scale Programs (''TP Sliding Scales''). Particularly, the TP Sliding Scales allowed Market-Makers and Floor Brokers to pay reduced rates for their Trading Permits if they committed in advance to a specific tier that includes a minimum number of eligible Market-Maker and Floor Broker Trading Permits, respectively, for each calendar year.[54]

As noted above, Trading Permits were tied to bandwidth allocation, logins and appointment costs, and as such, TPH organizations may hold multiple Trading Permits of the same type in order to meet their connectivity and appointment cost needs. Post-Migration, bandwidth allocation, logins and appointment costs are no longer tied to a Trading Permit, and as such, the Exchange proposes to modify its Trading Permit structure. Particularly, in connection with the migration, the Exchange adopted separate on-floor and off-floor Trading Permits for Market-Makers and Floor Brokers, adopted a new Clearing TPH Permit, and proposes to modify the corresponding fees and discounts. As was the case pre-migration, the proposed access fees discussed below will continue to be non-refundable and will be assessed through the integrated billing system during the first week of the following month. If a Trading Permit is issued during a calendar month after the first trading day of the month, the access fee for the Trading Permit for that calendar month is prorated based on the remaining trading days in the calendar month. Trading Permits will be renewed

[48] *See* Cboe Options Fees Schedule, Bandwidth Packet Fees.

[49] *See* Cboe Options Rules 3.1(a)(iv)–(v).

[50] The fees were waived through September 2019 for the first Market-Maker and Electronic Access GTH Trading Permits.

[51] *See* Cboe Options Fees Schedule.

[52] Id.

[53] Id.

[54] Due to the October 7 migration, the Exchange had amended the TP Sliding Scale Programs to provide that any commitment to Trading Permits under the TP Sliding Scales shall be in place through September 2019, instead of the calendar year. *See* Cboe Options Fees Schedule, Footnotes 24 and 25.

automatically for the next month unless the Trading Permit Holder submits written notification to the Membership Services Department by 4 p.m. CT on the second-to-last business day of the prior month to cancel the Trading Permit effective at or prior to the end of the applicable month. Trading Permit Holders will only be assessed a single monthly fee for each type of electronic Trading Permit it holds.

First, TPHs no longer need to hold multiple permits for each type of electronic Trading Permit (*i.e.,* electronic Market-Maker Trading Permits and/or and Electronic Access Permits). Rather, for electronic access to the Exchange, a TPH need only purchase one of the following permit types for each trading function the TPH intends to perform: Market-Maker Electronic Access Permit (''MM EAP'') in order to act as an off-floor Market-Maker and which will continue to be assessed a monthly fee of $5,000, Electronic Access Permit (''EAP'') in order to submit orders electronically to the Exchange [55] and which will be assessed a monthly fee of $3,000, and a Clearing TPH Permit, for TPHs acting solely as a Clearing TPH, which will be assessed a monthly fee of $2,000 (and is more fully described below). For example, a TPH organization that wishes to act as a Market-Maker and also submit orders electronically in a non-Market Maker capacity would have to purchase one MM EAP and one EAP. TPHs will be assessed the monthly fee for each type of Permit once per electronic access capacity.

Next, the Exchange proposes to adopt a new Trading Permit, exclusively for Clearing TPHs that are approved to act solely as a Clearing TPH (as opposed to those that are also approved in a capacity that allows them to submit orders electronically). Currently any TPH that is registered to act as a Clearing TPH must purchase an EAP, whether or not that Clearing TPH acts solely as a Clearing TPH or acts as a Clearing TPH and submits orders electronically. The Exchange proposes to adopt a new Trading Permit, for any TPH that is registered to act solely as Clearing TPH at a discounted rate of $2,000 per month.[56]

Additionally, the Exchange proposes to eliminate its fees for Global Trading Hours Trading Permits. Particularly, the Exchange proposes to provide that any Market-Maker EAP, EAP and Clearing TPH Permit provides access (at no additional cost) to the GTH session.[57] Additionally, the Exchange proposes to amend Footnote 37 of the Fees Schedule regarding GTH in connection with the migration. Currently Footnote 37 provides that separate access permits and connectivity is needed for the GTH session. The Exchange proposes to eliminate this language as that is no longer the case post-migration (*i.e.,* an electronic Trading Permits will grant access to both sessions and physical and logical ports may be used in both sessions, eliminating the need to purchase separate connectivity). The Exchange also notes that in connection with migration, the Book used during Regular Trading Hours (''RTH'') will be the same Book used during GTH (as compared to pre-migration where the Exchange maintained separate Books for each session). The Exchange therefore also proposes to eliminate language in Footnote 37 stating that GTH is a segregated trading session and that there is no market interaction between the two sessions.

The Exchange next proposes to adopt MM EAP Appointment fees. By way of background, a registered Market-Maker may currently create a Virtual Trading Crowd (''VTC'') Appointment, which confers the right to quote electronically in an appropriate number of classes selected from ''tiers'' that have been structured according to trading volume statistics, except for the AA tier.[58] Each Trading Permit historically held by a Market-Maker had an appointment credit of 1.0. A Market-Maker could select for each Trading Permit the Market-Maker held any combination of classes whose aggregate appointment cost did not exceed 1.0. A Market-Maker could not hold a combination of appointments whose aggregate appointment cost was greater than the number of Trading Permits that Market-Maker held.[59]

As discussed, post-migration, bandwidth allocation, logins and appointment costs are no longer tied to a single Trading Permit and therefore TPHs no longer need to have multiple permits for each type of electronic Trading Permit. Market-Makers must still select class appointments in the classes they seek to make markets electronically.[60] Particularly, a Market-Maker firm will only be required to have one permit and will thereafter be charged for one or more ''Appointment Units'' (which will scale from 1 ''unit'' to more than 5 ''units''), depending on which classes they elect appointments in. Appointment Units will replace the standard 1.0 appointment cost, but function in the same manner. Appointment weights (formerly known as ''appointment costs'') for each appointed class will be set forth in Cboe Options Rule 5.50(g) and will be summed for each Market-Maker in order to determine the total appointment units, to which fees will be assessed. This was the manner in which the tier costs per class appointment were summed to meet the 1.0 appointment cost, the only difference being that if a Market-Maker exceeds this ''unit'', then their fees will be assessed under the ''unit'' that corresponds to the total of their appointment weights, as opposed to holding another Trading Permit because it exceeded the 1.0 ''unit''. Particularly, the Exchange proposes to adopt a new MM EAP Appointment Sliding Scale. Appointment Units for each assigned class will be aggregated for each Market-Maker and Market-Maker affiliate. If the sum of appointments is a fractional amount, the total will be rounded up to the next highest whole Appointment Unit. The following lists the progressive monthly fees for Appointment Units: [61]

Market-Maker EAP appointments	Quantity	Monthly fees (per unit)
Appointment Units	1	$0
	2	6,000
	3 to 5	4,000
	>5	3,100

As noted above, upon migration the Exchange required separate Trading Permits for on-floor and off-floor activity. As such, the Exchange

[55] EAPs may be purchased by TPHs that both clear transactions for other TPHs (*i.e.,* a ''Clearing TPH'') and submit orders electronically.

[56] Cboe Option Rules provides the Exchange authority to issue different types of Trading Permits which allows holders, among other things, to act in one or more trading functions authorized by the Rules. *See* Cboe Options Rule 3.1(a)(iv). The Exchange notes that currently 17 out of 38 Clearing TPHs are acting solely as a Clearing TPH on the Exchange.

[57] The Exchange notes that Clearing TPHs must be properly authorized by the Options Clearing Corporation (''OCC'') to operate during the Global Trading Hours session and all TPHs must have a Letter of Guarantee to participate in the GTH session (as is the case today).

[58] *See* Cboe Options Rule 5.50 (Appointment of Market-Makers).

[59] For example, if a Market-Maker selected a combination of appointments that has an aggregate appointment cost of 2.5, that Market-Maker must hold at least 3 Market-Maker Trading Permits.

[60] *See* Cboe Options Rule 5.50(a).

[61] For example, if a Market-Maker's total appointment costs amount to 3.5 unites, the Market-Maker will be assessed a total monthly fee of $14,000 (1 appointment unit at $0, 1 appointment unit at $6,000 and 2 appointment units at $4,000) as and for appointment fees and $5,000 for a Market-Maker Trading Permit, for a total monthly sum of $19,000, where a Market-Maker currently (*i.e.,* prior to migration) with a total appointment cost of 3.5 would need to hold 4 Trading Permits and would therefore be assessed a monthly fee of $20,000.

proposes to maintain a Floor Broker Trading Permit and adopt a new Market-Maker Floor Permit for on-floor Market-Makers. In addition, RUT, SPX, and VIX Tier Appointment fees will be charged separately for Permit, as discussed more fully below.

As briefly described above, the Exchange currently maintains TP Sliding Scales, which allow Market-Makers and Floor Brokers to pay reduced rates for their Trading Permits if they commit in advance to a specific tier that includes a minimum number of eligible Market-Maker and Floor Broker Trading Permits, respectively, for each calendar year. The Exchange proposes to eliminate the current TP Sliding Scales, including the requirement to commit to a specific tier, and replace it with new TP Sliding Scales as follows:[62]

Floor TPH permits	Current permit qty	Current monthly fee (per permit)	Proposed permit qty	Proposed monthly fee (per permit)
Market-Maker Floor Permit	1–10	$5,000	1	$6,000
	11–20	3,700	2 to 5	4,500
	21 or more	1,800	6 to 10	3,500
			>10	2,000
Floor Broker Permit	1	9,000	1	7,500
	2–5	5,000	2 to 3	5,700
	6 or more	3,000	4 to 5	4,500
			>5	3,200

Floor Broker ADV Discount

Footnote 25, which governs rebates on Floor Broker Trading Permits, currently provides that any Floor Broker that executes a certain average of customer or professional customer/voluntary customer (collectively ''customer'') open-outcry contracts per day over the course of a calendar month in all underlying symbols excluding Underlying Symbol List A (except RLG, RLV, RUI, and UKXM), DJX, XSP, and subcabinet trades (''Qualifying Symbols''), will receive a rebate on that TPH's Floor Broker Trading Permit Fees. Specifically, any Floor Broker Trading Permit Holder that executes an average of 15,000 customer (''C'' origin code) and/or professional customer and voluntary customer (''W'' origin code) open-outcry contracts per day over the course of a calendar month in Qualifying Symbols will receive a rebate of $9,000 on that TPH's Floor Broker Trading Permit fees. Additionally, any Floor Broker that executes an average of 25,000 customer open-outcry contracts per day over the course of a calendar month in Qualifying Symbols will receive a rebate of $14,000 on that TPH's Floor Broker Trading Permit fees. The Exchange proposes to maintain, but modify, its discount for Floor Broker Trading Permit fees. First, the measurement criteria to qualify for a rebate will be modified to only include customer (''C'' origin code) open-outcry contracts executed per day over the course of a calendar month in all underlying symbols, while the rebate amount will be modified to be a percentage of the TPH's Floor Broker Permit total costs, instead of a straight rebate.[63] The criteria and corresponding percentage rebates are noted below.[64]

Floor broker ADV discount tier	ADV	Floor broker permit rebate (percent)
1	0 to 99,999	0
2	100,000 to 174,999	15
3	>174,999	25

Next, the Exchange proposes to modify its SPX, VIX and RUT Tier Appointment Fees. Currently, these fees are assessed to any Market-Maker TPH that either (i) has the respective SPX, VIX or RUT appointment at any time during a calendar month and trades a specified number of contracts or (ii) trades a specified number of contracts in open outcry during a calendar month. More specifically, the Fees Schedule provides that the $3,000 per month SPX Tier Appointment is assessed to any Market-Maker Trading Permit Holder that either (i) has an SPX Tier Appointment at any time during a calendar month and trades at least 100 SPX contracts while that appointment is active or (ii) conducts any open outcry transaction in SPX or SPX Weeklys at any time during the month. The $2,000 per month VIX Tier Appointment is assessed to any Market-Maker Trading Permit Holder that either (i) has an SPX Tier Appointment at any time during a calendar month and trades at least 100 VIX contracts while that appointment is active or (ii) conducts at least 1000 open outcry transaction in VIX at any time during the month. Lastly, the $1,000 RUT Tier Appointment is assessed to any Market-Maker Trading Permit Holder that either (i) has an RUT Tier Appointment at any time during a calendar month and trades at least 100 RUT contracts while that appointment is active or (ii) conducts at least 1000 open outcry transaction in RUT at any time during the month.

Because the Exchange is separating Market-Maker Trading Permits for electronic and open-outcry market-making, the Exchange will be assessing separate Tier Appointment Fees for each type of Market-Maker Trading Permit. The Exchange proposes that a MM EAP will be assessed the Tier Appointment Fee whenever the Market-Maker executes the corresponding specified number of contracts, if any. The Exchange also proposes to modify the threshold number of contracts a Market-Maker must execute in a month to trigger the fee for SPX, VIX and RUT. Particularly, for SPX, the Exchange proposes to eliminate the 100 contract threshold for electronic SPX executions.[65] The Exchange notes that

[62] In light of the proposed change to eliminate the TP Sliding Scale, the Exchange proposes to eliminate Footnote 24 in its entirety.

[63] As is the case today, the Floor Broker ADV Discount will be available for all Floor Broker Trading Permits held by affiliated Trading Permit Holders and TPH organizations.

[64] In light of the proposal to eliminate the TP Sliding Scales and the Floor Broker rebates currently set forth under Footnote 25, the Exchange proposes to eliminate Footnote 25 in its entirety.

[65] The Exchange notes that subsequent to the Original Filing that proposed these changes on October 1 and 2, 2019 (SR–CBOE–2019–077 and SR–CBOE–2019–082), and subsequent to the Second Proposed Rule Change filing that proposed these changes on November 29, 2019 (SR–CBOE–2019–111), the Exchange amended the proposed Market-Maker Tier Appointment fees to provide that the SPX Tier Appointment Fee will be assessed to any Market-Maker EAP that executes at least 1,000 contracts in SPX (including SPXW) excluding contracts executed during the opening rotation on the final settlement date of VIX options and futures with the expiration used in the VIX settlement calculation in filing No. SR–CBOE–2019–124. The additions proposed by filing SR–CBOE–2019–124 are double underlined in Exhibit 5A and the deletions are doubled bracketed in Exhibit 5A.

historically, all TPHs that trade SPX electronically executed more than 100 contracts electronically each month (*i.e.,* no TPH electronically traded between 1 and 100 contracts of SPX). As no TPH would currently be negatively impacted by this change, the Exchange proposes to eliminate the threshold for SPX and align the electronic SPX Tier Appointment Fee with that of the floor SPX Tier Appointment Fee, which is not subject to any executed volume threshold. For the VIX and RUT Tier appointments, the Exchange proposes to increase the threshold from 100 contracts a month to 1,000 contracts a month. The Exchange notes the Tier Appointment Fee amounts are not changing.[66] In connection with the proposed changes, the Exchange proposes to relocate the Tier Appointment Fees to a new table and eliminate the language in the current respective notes sections of each Tier Appointment Fee as it is no longer necessary.

Trading Permit Holder Regulatory Fee

The Fees Schedule provides for a Trading Permit Holder Regulatory Fee of $90 per month, per RTH Trading Permit, applicable to all TPHs, which fee helps more closely cover the costs of regulating all TPHs and performing regulatory responsibilities. In light of the changes to the Exchange's Trading Permit structure, the Exchange proposes to eliminate the TPH Regulatory Fee. The Exchange notes that there is no regulatory requirement to maintain this fee.

2. Statutory Basis

The Exchange believes the proposed rule change is consistent with the Securities Exchange Act of 1934 (the ''Act'') and the rules and regulations thereunder applicable to the Exchange and, in particular, the requirements of Section 6(b) of the Act.[67] Specifically, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5)[68] requirements that the rules of an exchange be designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest. Additionally, the Exchange believes the proposed rule change is consistent with Section 6(b)(4) of the Act,[69] which requires that Exchange rules provide for the equitable allocation of reasonable dues, fees, and other charges among its Trading Permit Holders and other persons using its facilities. Additionally, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5)[70] requirement that the rules of an exchange not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

The Exchange first stresses that the proposed changes were not designed with the objective to generate an overall increase in access fee revenue, as demonstrated by the anticipated loss of revenue discussed above. Rather, the proposed changes were prompted by the Exchange's technology migration and the adoption of a new (and improved) connectivity infrastructure, rendering the pre-migration structure obsolete. Such changes accordingly necessitated an overhaul of the Exchange's previous access fee structure and corresponding fees. Moreover, the proposed changes more closely align the Exchange's access fees to those of its Affiliated Exchanges, and reasonably so, as the Affiliated Exchanges offer substantially similar connectivity and functionality and are on the same platform that the Exchange has now migrated to.

The Exchange also operates in a highly competitive environment. The SEC Division of Trading and Markets' Fee Guidance provides that in determining whether a proposed fee is constrained by significant competitive forces, the Commission will consider whether there are reasonable substitutes for the product or service that is the subject of a proposed fee. As described in further detail below, the Exchange believes substitutable products and services are in fact available to market participants, including, among other things, other options exchanges a market participant may connect to in lieu of the Exchange, indirect connectivity to the Exchange via a third-party reseller of connectivity and/or trading of any options product, including proprietary products, in the Over-the-Counter (OTC) markets. Indeed, there are currently 16 registered options exchanges that trade options, some of which have similar or lower connectivity fees.[71] Based on publicly available information, no single options exchange has more than 17% of the market share as of October 21, 2020.[72] Further, low barriers to entry mean that new exchanges may rapidly and inexpensively enter the market and offer additional substitute platforms to further compete with the Exchange. For example, there have been 4 exchanges that have been added in the U.S. options markets in the last 5 years (*i.e.,* Cboe EDGX Inc., Nasdaq MRX, LLC, MIAX Pearl, LLC and MIAX Emerald LLC).

There is also no regulatory requirement that any market participant connect to any one options exchange, that any market participant connect at a particular connection speed or act in a particular capacity on the Exchange, or trade any particular product offered on an exchange. Moreover, membership is not a requirement to participate on the Exchange. A market participant may submit orders to the Exchange via a TPH broker.[73] Indeed, the Exchange is unaware of any one options exchange whose membership includes every registered broker-dealer. In fact, the Exchange believes that as of October 21, 2020, only 3 broker-dealers out of approximately 250 broker-dealers that are members of at least one exchange that lists options for trading were members of all 16 options exchanges.[74] Additionally, several broker-dealers are members of only a single exchange that lists options for trading.[75] The Exchange has also identified numerous broker-dealers that are members of other options exchanges, but not the Exchange. For example, the Exchange has identified approximately 25 broker-dealers that are members of Nasdaq ISE, LLC (an exchange that lists only options), but not Cboe Exchange, Inc

[66] Floor Broker Trading Surcharges for SPX/SPXW and VIX are also not changing. The Exchange however, is creating a new table for Floor Broker Trading Surcharges and relocating such fees in the Fees Schedule in connection with the proposal to eliminate fees currently set forth in the ''Trading Permit and Tier Appointment Fees'' Table.

[67] 15 U.S.C. 78f(b).

[68] 15 U.S.C. 78f(b)(5).

[69] 15 U.S.C. 78f(b)(4).

[70] 15 U.S.C. 78f(b)(5).

[71] *See e.g.,* Affiliated Exchange Fee Schedules. *See also e.g.,* BOX Options Fees Schedule, Section VI (Technology Fees) and Section IX (Participant Fees).

[72] *See* Cboe Global Markets U.S. Options Market Volume Summary (October 21, 2020), available at *https://markets.cboe.com/us/options/market_statistics/.*

[73] Such market participant would be subject to the fees of that broker. The Exchange notes that such broker is not required to publicize, let alone justify or file with the Commission its fees, and as such could charge the market participant any fees it deems appropriate, even if such fees would otherwise be considered potentially unreasonable or uncompetitive fees.

[74] *See* SEC October 2020 Active Broker Dealer Report, provided by the SEC Office of Managing Executive on October 8, 2020.

[75] *Id.* Approximately 7 broker-dealers are members of the Cboe Exchange, Inc. only, approximately 7 broker-dealers are members of only Nasdaq PHLX LLC, and approximately 3 broker-dealers are members of only Nasdaq ISE, Inc.

(which also lists only options).[76] Similarly, the Exchange has identified at least 4 broker-dealers that trade options and are members of one or more of the Exchange's affiliated options exchanges, but not Cboe Exchange, Inc. Indeed, the number of members at each exchange that trades options varies greatly. Particularly, the number of members of exchanges that trade options vary between approximately 9 and 171 broker-dealers.[77] Even the number of members between the Exchange and its 3 other options exchange affiliates vary. Particularly, while the Exchange currently has 92 members, Cboe C2 has 54 members, Cboe EDGX has 52 members that trade options and Cboe BZX has 66 members that trade options.

The rule structure for options exchanges are also fundamentally different from those of equities exchanges. In particular, options market participants are not forced to connect to (and purchase market data from) all options exchanges. For example, there are many order types that are available in the equities markets that are not utilized in the options markets, which relate to mid-point pricing and pegged pricing which require connection to the SIPs and each of the equities exchanges in order to properly execute those orders in compliance with best execution obligations. Additionally, in the options markets, the linkage routing and trade through protection are handled by the exchanges, not by the individual members. Thus not connecting to an options exchange or disconnecting from an options exchange does not potentially subject a broker-dealer to violate order protection requirements.[78] Gone are the days when the retail brokerage firms (such as Fidelity, Schwab, and eTrade) were members of the options exchanges—they are not members of the Exchange or its affiliates, they do not purchase connectivity to the Exchange, and they do not purchase market data from the Exchange. Accordingly, not only is there not an actual regulatory requirement to connect to every options exchange, the Exchange believes there is also no ''de facto'' or practical requirement as well, as further evidenced by the recent significant reduction in the number of broker-dealers that are members of all options exchanges.

The Exchange is also not aware of any reason why any particular market participant could not simply drop its connections and cease being a TPH of the Exchange if the Exchange were to establish ''unreasonable'' and uncompetitive price increases for its connectivity alternatives. As further evidence of the fact that market participants can and do disconnect from exchanges based on connectivity pricing, R2G Services LLC (''R2G'') filed a comment letter after BOX Exchange LLC (''BOX'') proposed rule changes to increase its connectivity fees (SR–BOX–2018–24, SRBOX–2018–37, and SR–BOX–2019–04).[79] The R2G Letter stated, ''[w]hen BOX instituted a $10,000/month price increase for connectivity; we had no choice but to terminate connectivity into them as well as terminate our market data relationship. The cost benefit analysis just didn't make any sense for us at those new levels.'' Accordingly, this example shows that if an exchange sets too high of a fee for connectivity and/or market data services for its relevant marketplace, market participants can choose to disconnect from the Exchange. Moreover, the Exchange does not assess any termination fee for a market participant to drop its connectivity or membership, nor is the Exchange aware of any other costs that would be incurred by a market participant to do so. The Exchange notes that in fact, a number of firms currently do not participate on the Exchange or participate on the Exchange though sponsored access arrangements with other broker-dealers rather than by becoming a member. Additionally, as noted above, only 3 broker-dealers are currently members of all 16 options exchanges, which the Exchange believes further demonstrates that, in addition to the absence of a rule requirement to connect to every option exchange, there is no prevailing business model that would practically require a broker-dealer to connect to every single options exchange.[80] Moreover, of these 3 broker-dealers, only 1 such broker-dealer connects directly to the Exchange and that broker-dealer does not provide connectivity to any other TPH.

Additionally, the Exchange notes that non-TPHs such as Service Bureaus and Extranets resell Cboe Options connectivity.[81] This indirect connectivity is another viable alternative for market participants to trade on the Exchange without connecting directly to the Exchange (and thus not pay the Exchange's connectivity fees), which alternative is already being used by non-TPHs and further constrains the price that the Exchange is able to charge for connectivity to its Exchange. The Exchange notes that it could, but chooses not to, preclude market participants from reselling its connectivity. The Exchange also chooses not to adopt fees that would be assessed to third-party resellers on a per customer basis (*i.e.,* fee based on number of TPHs that connect to the Exchange indirectly via the third-party). Indeed, the Exchange does not receive any connectivity revenue when connectivity is resold by a third-party, which often is resold to multiple customers, some of whom are agency broker-dealers that have numerous customers of their own.[82] Moreover, the Exchange has seen an increase in the number of resellers since pre-migration, adding to the pool of potential competitors. In sum, the Exchange believes this creates and fosters a competitive environment and subjects the Exchange to competitive forces in pricing its connectivity. Particularly, in the event that a market participant

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[76] *Id.* The Exchange notes this is an increase since June 2020, when approximately 20 broker-dealers were members of ISE but not Cboe Options. *See* SEC June 2020 Active Broker Dealer Report.

[77] *See e.g.,* SEC June 2020 Active Broker Dealer Report. More specifically, 1 exchange had 9 members, 4 exchanges had between 36–50 members, 5 exchanges had between 50–100 members, 4 exchanges had between 100–150 members and 2 exchanges had more than 150 members. The Exchange notes however that some of these exchanges also trade equities and the Exchange is therefore unable to determine how many members at each exchange trade options.

[78] The Exchange notes this discussion is consistent with the Fee Guidance suggestion that any discussion of alternatives should ''include a discussion of how regulatory requirements, particularly best execution obligations, Regulation NMS Rule 611 (the Order Protection Rule), and/or the Options Order Protection and Locked/Crossed Market Plan (Options Linkage Plan), as applicable, affect the competitive analysis.''

[79] See Letter from Stefano Durdic, R2G, to Vanessa Countryman, Acting Secretary, Commission, dated March 27, 2019 (the ''R2G Letter'').

[80] The Exchange further notes that these 3 broker-dealers represent different market participants. Particularly, 1 of these broker-dealers is a bulge bracket bank, 1 is a brokerage firm and 1 is a clearing firm.

[81] Prior to migration, there were 13 firms that resold Cboe Options connectivity. Post-migration, the Exchange anticipated that there would be 19 firms that resell Cboe Options connectivity (both physical and logical) and as of October 2020 there are 17 firms that resell Cboe Options connectivity. The Exchange does not have specific knowledge as to what latency a market participant may experience using an indirect connection versus a direct connection and notes it may vary by the service provided by the extranet provider and vary between extranet providers. The Exchange believes however, that there are extranet providers able to provide connections with a latency that is comparable to latency experienced using a direct connection.

[82] The Exchange notes that resellers are not required to publicize, let alone justify or file with the Commission their fees, and as such could charge the market participant any fees it deems appropriate (including connectivity fees higher than the Exchange's connectivity fees), even if such fees would otherwise be considered potentially unreasonable or uncompetitive fees.

views the Exchange's direct connectivity and access fees as more or less attractive than the competition, that market participant can choose to connect to the Exchange indirectly or may choose not to connect to that exchange and connect instead to one or more of the other 15 options markets. For example, two TPHs that connected directly to the Exchange pre-migration, began connecting indirectly via an extranet provider shortly after the October 2019 migration and currently still connect via extranets. An additional four TPHs transitioned to indirect connectivity from direct connectivity in or around February 2020, which was the first month after the legacy Network Access Ports were decommissioned. The Exchange notes that it has not received any comments that, and has no evidence to suggest, the six total TPHs that transitioned from direct connections to an indirect connections post-migration were the result of an undue financial burden resulting from the proposed fee changes.[83] Rather, the Exchange believes the transitions demonstrate that indirect connectivity is in fact a viable option for market participants, therefore reflecting a competitive environment that the Exchange must be mindful of when determining its connectivity fees.[84] It further demonstrates the manner in which market participants connect to the Exchange is entirely within the discretion of market participants, who can consider the fees charged by the Exchange and by resellers when making decisions.

Additionally, pre-migration, in August 2019, the Exchange had 97 members (TPH organizations), of which nearly half connected indirectly to the Exchange.[85] Similarly, in December 2019, after a new broker-dealer became a member of the Exchange in late November 2019,[86] the Exchange had 97 members, of which nearly half of the participants connected indirectly to the Exchange. More specifically, in December 2019, 47 TPHs connected directly to the Exchange and accounted for approximately 66% of the Exchange's volume, 46 TPHs connected indirectly to the Exchange and accounted for approximately 29% of the Exchange's volume and 4 TPHs utilized both direct and indirect connections and accounted for approximately 5% of the Exchange's volume.[87] In December 2019, TPHs that connected directly to the Exchange purchased a collective 179 physical ports (including legacy physical ports), 144 of which were 10 Gb ports and 35 of which were 1 Gb ports.[88] The Exchange notes that of those market participants that do connect to the Exchange, it is the individual needs of each market participant that determine the amount and type of Trading Permits and physical and logical connections to the Exchange.[89] With respect to physical connectivity, many TPHs were able to purchase small quantities of physical ports. For example, approximately 36% of TPHs that connected directly to the Exchange purchased only one to two 1 Gb ports, approximately 40% purchased only one to two 10 Gb ports, and approximately 40% had purchased a combined total of one to two ports (for both 1 Gb and 10 Gb). Further, no TPHs that connected directly to the Exchange had more than five 1 Gb ports, and only 8.5% of TPHs that connected directly to the Exchange had between six and ten 10 GB ports and only 8.5% had between ten and fourteen 10 Gb ports. There were also a combined total of 41 ports used for indirect connectivity (twenty-one 1 Gb ports and twenty 10 Gb ports).[90] The Exchange notes that all types of members connected indirectly to the Exchange including Clearing firms, Floor Brokers, order flow providers, and on-floor and off-floor Market-Makers, further reflecting the fact that each type of market participant has the option to participate on an exchange without direct connectivity. Indeed, market participants choose if and how to connect to a particular exchange and because it is a choice, the Exchange must set reasonable connectivity pricing, otherwise prospective members would not connect and existing members would disconnect or connect through a third-party reseller of connectivity.[91]

Moreover, the Exchange notes that the Commission itself has repeatedly expressed its preference for competition over regulatory intervention in determining prices, products, and services in the securities markets. Particularly, in Regulation NMS, the Commission highlighted the importance of market forces in determining prices and SRO revenues and, also, recognized that current regulation of the market system ''has been remarkably successful in promoting market competition in its broader forms that are most important to investors and listed companies.'' [92] The number of available exchanges to connect to ensures increased competition in the marketplace, and constrains the ability of exchanges to charge supracompetitive fees for access to its market. The Exchange is also not aware of any evidence that has been offered or demonstrated that a market share of approximately 17% provides the Exchange with anti-competitive pricing power. Indeed, the Exchange believes for all the reasons articulated above, that its market share does not provide it with anti-competitive pricing power. Moreover, the Exchange believes the fact that it can lose, and has lost, market share demonstrates the competitive forces to which the Exchange is subject. For example, in 2019 and through March 2020, the Exchange generally had a market share percentage in the low to mid 20s. Since March 2020, the Exchange's market share has generally been in the mid to high teens.[93] Furthermore, the Exchange's affiliated options exchanges have substantially similar physical and logical connectivity fees, notwithstanding a much lower market share ranging from approximately

[83] The Exchange notes that TPHs are not required to specify to the Exchange why it opts to no longer be a TPH, or why it cancels its ports, nor is a non-TPH market participating required to specify to the Exchange why it opts to not be a TPH and directly connect to the Exchange.

[84] In the post-migration period between February 2020 and June 2020, approximately 38 TPHs on average were directly connected to the Exchange each month, which is notably fewer than the approximately 45 TPHs that were directly connected each month during the pre-migration period between June 2017 through September 2019.

[85] The Exchange notes that one firm terminated in late September 2019, but that it believes it was unrelated to the migration and the proposed fee changes.

[86] In February 2020, such member also became a member of the Exchange's affiliated options exchanges, which have similar physical and logical connectivity fees to the proposed fees in this filing.

[87] Between June 2017 and December 2019, the number of TPHs that connected directly to the Exchange ranged from 43 to 47 TPHs and on average, accounted for an average of approximately 61% of the Exchange's total volume each month.

[88] Of the 4 TPHs that connected both directly and indirectly to the Exchange, 1 TPH had two 1 Gb Ports and the remaining 3 TPHs had a combined total of six 10 Gb ports.

[89] To assist market participants that are connected or considering connecting to the Exchange, the Exchange provides detailed information and specifications about its available connectivity alternatives in the Cboe C1 Options Exchange Connectivity Manual, as well as the various technical specifications. *See http://markets.cboe.com/us/options/support/technical/.*

[90] The Exchange notes that it does not know how many, and which kind of, connections each TPH that indirectly connects to the Exchange has.

[91] As shown above, the availability of 15 alternative options exchanges in addition to the viable option of indirect connectivity demonstrates that substitute connectivity products and services do exist, supporting the assertion the proposed fees are constrained by competitive forces.

[92] *See* Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496, 37499 (June 29, 2005) (''Regulation NMS Adopting Release'').

[93] *See* The Options Clearing Corporation, Market Data, Daily Volume, available at *https://www.theocc.com/Market-Data/Market-Data-Reports/Volume-and-Open-Interest/Daily-Volume.*

2.5%–9%.[94] As discussed extensively, if an exchange sets too high of a fee for connectivity and/or market data services for its relevant marketplace, market participants can choose to disconnect from the Exchange.

The Exchange also believes that competition in the marketplace constrains the ability of exchanges to charge supracompetitive fees for access to its market, even if such market, like the Exchange, offers proprietary products exclusive to that market. Notably, just as there is no regulatory requirement to become a member of any one options exchange, there is also no regulatory requirement for any market participant to trade any particular product, nor is there any requirement that any Exchange create or indefinitely maintain any particular product.[95] The Exchange also highlights that market participants may trade an Exchange's proprietary products through a third-party without directly or indirectly connecting to the Exchange. Additionally, market participants may trade any options product, including proprietary products, in the unregulated Over-the-Counter (OTC) markets for which there is no requirement for fees related to those markets to be public. Given the benefits offered by trading options on a listed exchange, such as increased market transparency and heightened contra-party creditworthiness due to the role of the Options Clearing Corporation as issuer and guarantor, the Exchange generally seeks to incentivize market participants to trade options on an exchange, which further constrains connectivity pricing. Market participants may also access other exchanges to trade other similar or competing proprietary or multi-listed products. Alternative products to the Exchange's proprietary products may include other options products, including options on ETFs or options futures, as well as particular ETFs or futures. For example, exclusively listed SPX options may compete with the following products traded on other markets: Multiply-listed SPY options (options on the ETF), E-mini S&P 500 Options (options on futures), and E-Mini S&P 500 futures (futures on index). Additionally, exclusively listed VIX options may compete with the following products traded on other markets: Multiply-listed VXX options (options on the ETF) and exclusively listed SPIKES options on the Miami International Securities Exchange, LLC (''MIAX'').[96] Other options exchanges are also not precluded from creating new proprietary products that may achieve similar objectives to (and therefore compete with) the Exchange's existing proprietary products. For example, Nasdaq PHLX exclusively lists options on the Nasdaq-100, which options, like index options listed on the Exchange, offer investors an alternative method to manage and hedge portfolio exposure to the U.S. equity markets. Indeed, even though exclusively listed proprietary products may not be offered by competitors, a competitor could create similar products if demand were adequate. As noted above for example, MIAX created its exclusive product SPIKES specifically to compete against VIX options.[97] In connection with a recently proposed amendment to the National Market System Plan Governing the Consolidated Audit Trail (''CAT NMS Plan''),[98] the Commission discussed the existence of competition in the marketplace generally, and particularly for exchanges with unique business models. Specifically, the Commission contemplated the possibility of a forced exit by an exchange as a result of a proposed amendment that could reduce the amount of CAT funding a participant could recover if certain implementation milestones were missed. The Commission acknowledged that, even if an exchange were to exit the marketplace due to its proposed fee-related change, it would not significantly impact competition in the market for exchange trading services because these markets are served by multiple competitors.[99] The Commission explicitly stated that ''[c]onsequently, demand for these services in the event of the exit of a competitor is likely to be swiftly met by existing competitors.'' [100] The Commission further recognized that while some exchanges may have a unique business model that is not currently offered by competitors, a competitor could create similar business models if demand were adequate, and if a competitor did not do so, the Commission believes it would be likely that new entrants would do so if the exchange with that unique business model was otherwise profitable.[101] Similarly, although the Exchange may have proprietary products not offered by other competitors, not unlike unique business models, a competitor could create similar products to an existing proprietary product if demand were adequate. As noted above, other exchanges, that have comparable connectivity fees, also currently offer exclusively listed products.[102] As such, the Exchange is still very much subject to competition and does not possess anti-competitive pricing power, even with its offering of proprietary products. Rather, the Exchange must still set reasonable connectivity pricing, otherwise prospective members would not connect, and existing members would disconnect or connect through a third-party reseller of connectivity, regardless of what products its offers.

Recently, on October 16, 2020, the Commission approved a proposal by NYSE National, Inc. (''NYSE National'') to adopt fees for the NYSE National Integrated Feed (a NYSE National-only market data feed), finding that NYSE National provided sufficient information to demonstrate that it was subject to significant substitution-based competitive forces in setting the proposed fees.[103] In the approval order,

[94] *See* Cboe Global Markets U.S. Options Market Volume Summary (August 31, 2020), available at *https://markets.cboe.com/us/options/market_statistics/.*

[95] If an option class is open for trading on another national securities exchange, the Exchange may delist such option class immediately. For proprietary products, the Exchange may determine to not open for trading any additional series in that option class; may restrict series with open interest to closing transactions, provided that, opening transactions by Market-Makers executed to accommodate closing transactions of other market participants and opening transactions by TPH organizations to facilitate the closing transactions of public customers executed as crosses pursuant to and in accordance with Rule 6.74(b) or (d) may be permitted; and may delist the option class when all series within that class have expired. *See* Cboe Rule 4.4, Interpretations and Policies .11.

[96] MIAX has described SPIKES options as ''designed specifically to compete head-to-head against Cboe's proprietary VIX® product.'' *See* MIAX Press Release, *SPIKES Options Launched on MIAX,* February 21, 2019, *available at https://www.miaxoptions.com/sites/default/files/press_release-files/MIAX_Press_Release_02212019.pdf.*

[97] *Id.*

[98] *See* Securities Exchange Act Release No. 86901 (September 9, 2019), 84 FR 48458 (September 13, 2019) (File No. S7–13–19).

[99] *Id.*

[100] *Id.*

[101] *Id.*

[102] *See e.g.,* Nasdaq PHLX LLC Rules, (Options 7 Pricing Schedule), Section 8A (Permit and Registration Fees) which provide for floor permit fees between $4,000 to $6,000 per permit and Section 9B (Port Fees), which provides various port fees ranging from $500 to $1,250 per port. *See also* Nasdaq PHLX LLC Rules, General 8 Connectivity, which provides for monthly physical connectivity fees including fees for 1 Gb physical connections priced at $2,500 per port and for 10 Gb physical connections starting at $10,000 per port and *see* MIAX Options Fees Schedule, Section 3b (Membership Fees, Monthly Trading Permit Fee), which provides for trading permit fees ranging from $1,500 to $22,000 per permit (which may include market-maker appointment costs) and Section 5 (System Connectivity Fees) which provides for monthly physical connectivity fees including fees for 1 Gb physical connections priced at $1,400 per port and for 10 Gb physical connections priced at $6,100 per port.

[103] *See* Securities Exchange Act Release No. 90217 (October 16, 2020) (SR–NYSENAT–2020–

Continued

the Commission cited NetCoalition I, in which the D.C. Circuit in vacating the Commission's 2008 ArcaBook Approval Order, stated ''the existence of a substitute does not necessarily preclude market power,'' that ''whether a market is competitive notwithstanding potential alternatives depends on factors such as the number of buyers who consider other products interchangeable and at what prices,'' and that ''[t]he inquiry into whether a market for a product is competitive . . . focuses on . . . the product's elasticity of demand.'' [104] The Commission also noted that the court found that the Commission's analysis of alternatives in the 2008 ArcaBook Approval Order did not reveal the number of potential users of the data or how they might react to a change in price.[105] The court also stated that there was no information regarding how many traders accessed NYSE Arca's depth-of-book data during the period it was offered without charge (and thus how many traders might have been interested in paying for NYSE Arca's depth-of-book data), or whether the traders who wanted depth-of-book data would have declined to purchase it if met with a supracompetitive price.[106] In contrast to the facts in the 2008 ArcaBook Approval Order, the Commission pointed out in the NYSE National Approval Order that NYSE National had in fact provided information regarding potential users of the proposed data feed, along with information regarding the reactions of users to the change in price. The Commission also cited information that was provided to show that market participants did not subscribe to the data feed, even when the fee was offered for free. The Commission ultimately relied on, in part, this information in making its determination that NYSE National was subject to significant competitive forces in pricing their product.

The Exchange points out that it too has provided similar types of information to the Commission and believes such information supports the finding that the Exchange is subject to significant substitution-based competitive forces in pricing its connectivity and access fees. For instance, the Exchange noted there are approximately 250 broker-dealers that are potential ''users'' of the Exchange's services (*i.e.,* broker-dealers who are members of at least one options exchange and may become a member of, and/or connect directly to, the Exchange). Additionally, the Exchange provided the number of broker-dealers that are members of the Exchange (approximately 92—which is less than half of the potential user base) and the number of members that have connected directly to the Exchange (approximately 38—which is less than half of the Exchange's members). The Exchange also provided information demonstrating that market participants have access to one or more substitutes to (i) trade options without becoming a member of the Exchange (*e.g.,* the availability of 15 other options exchanges, the ability to trade through a third-party, and the ability to trade options products in the OTC market) and (ii) connect indirectly to the Exchange (*e.g.,* the ability to connect indirectly through one of 17 third-party resellers). The Exchange also cited to data demonstrating TPHs can, and have, transitioned their direct access to indirect access (6 TPHs transitioned to indirect connectivity subsequent to this proposed rule change).[107] Furthermore, the Exchange provided information relating to the number of market participants that are either not members of the Exchange (at least 25 broker-dealers [108]) or that do not or did not connect directly to the Exchange both after and before the fee change (approximately 38). Lastly, the Exchange has described the reactions of TPHs to the price change, received both informally and formally, and which again, were notably positive. The Exchange stresses that the proof of competitive constraints does not depend on showing that members walked away, or threatened to walk away, from a product due to a pricing change. Rather, the very absence of such negative feedback (in and of itself, and particularly when coupled with positive feedback) is indicative that the proposed fees are, in fact, reasonable and consistent with the Exchange being subject to competitive forces in setting fees. Accordingly, the Exchange believes the Commission has a sufficient basis to determine that the Exchange was subject to significant competitive forces in setting the terms of its proposed fees. Moreover, the Commission has found that, if an exchange meets the burden of demonstrating it was subject to significant competitive forces in setting its fees, the Commission ''will find that its fee rule is consistent with the Act unless ''there is a substantial countervailing basis to find that the terms'' of the rule violate the Act or the rules thereunder.'' [109] The Exchange is not aware of, nor has the Commission articulated, a substantial countervailing basis for finding the proposal violates the Act or the rules thereunder.

In addition to all the reasons discussed above, the Exchange believes its proposed fees are reasonable in light of the numerous benefits the new connectivity infrastructure provides market participants. As described, the post-migration connectivity architecture provides for a latency equalized infrastructure, improved system performance, and increased sustained order and quote per second capacity. As such, even where a fee for a particular type or kind of connectivity may be higher than it was to its pre-migration equivalent, such increase is reasonable given the increased benefits market participants are getting for a similar or modestly higher price. Moreover, as noted above, the objective of the proposed fee changes was not to generate an overall increase in access fee revenue, but rather adopt fees in connection with a new (and improved) connectivity infrastructure. Indeed, the Exchange tried to the best of its ability to approximate the overall connectivity revenue generated by the Exchange's pre-migration fees. Notably, the Exchange's pre-migration access fees were previously filed with the Commission and not suspended nor disapproved.[110] The Exchange further

005) (order approving proposed fees for NYSE National Integrated Feed) (''NYSE National Approval Order'').

[104] See NetCoalition v. SEC, 615 F.3d 525, 542 (D.C. Cir. 2010) (''NetCoalition I'') (internal quotation marks omitted).

[105] *Id.*

[106] *Id.*

[107] The Exchange again notes however that the TPHs did not explain to the Exchange as to why they terminated their direct connectivity in favor of connecting indirectly to the Exchange.

[108] As discussed, the Exchange identified approximately 25 broker-dealers that are members of Nasdaq ISE, LLC (an exchange that lists only options) and not members the Exchange. The Exchange believes there are additional broker-dealers that trade options but do not trade on the Exchange, but uses the ISE comparison as an example.

[109] *See* Securities Exchange Act Release No. 59039 (December 2, 2008), 73 FR 74770, 74781 (December 9, 2008) (''2008 ArcaBook Approval Order'') (approving proposed rule change to establish fees for a depth-of-book market data product).

[110] Although the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (the ''Dodd-Frank Act'') amended 19(b) of the Exchange Act to provide that SROs' fee changes become immediately effective on filing, the legislative history makes clear that while Congress intended to streamline SROs' rule filing procedures, the proposed change did not ''[diminish]the SEC's authority to reject an improperly filed rule, disapprove a rule that is not consistent with the Exchange Act or [diminish] the applicable public notice and comment period.'' *See* S. Rep 111–176, at 106 (2010). The Commission therefore had every right to pursue a suspension and disapproval order of prior rule filings that adopted or amended connectivity fees that were in place prior to the migration if it had believed any proposed fees in those rule filings were not consistent with the

believes that the reasonableness of its proposed connectivity fees is demonstrated by the very fact that such fees are in line with, and in some cases lower than, the costs of connectivity at other Exchanges,[111] including its own affiliated exchanges which have the same connectivity infrastructure as the Exchange currently does since migration.[112] The Exchange notes these fees were similarly filed with the Commission and not suspended nor disapproved.[113] Particularly, the Exchange's affiliate C2, previously migrated to the same trading platform to which the Exchange has now migrated. In that connection, C2 overhauled its connectivity structure and adopted similar connectivity fees under similar circumstances as those proposed herein.[114] The Commission did not suspend that C2 proposed rule change and did not contend that C2 had failed to demonstrate its proposal was reasonable, equitable and not unfairly discriminatory. The C2 migration filing was filed subsequent to the D.C. Circuit decision in Susquehanna Int'l Grp., LLC v. SEC, 866 F.3d 442 (D.C. Cir. 2017), meaning that such filing was subject to the same (and current) standard for SEC review and approval as the standard to which this filing is subject.

Furthermore, in determining the proposed fee changes discussed above, the Exchange reviewed the current competitive landscape, considered the fees historically paid by market participants for connectivity to the pre-migration system, and also assessed the impact on market participants to ensure that the proposed fees would not create an undue financial burden on any market participants, including smaller market participants. Indeed, the Exchange received no comments from any TPH suggesting that it was unduly burdened by the proposed changes described herein, which were first announced via Exchange Notice nearly two months in advance of the migration (now over one year ago),[115] nor were any timely comment letters received by the Commission by the comment period submission deadline of November 12, 2019. The Exchange again underscores the fact that no comment letters were received in response to its Second, Third, Fifth or Sixth Proposed Rule Change, and that no individual market participant has provided any written comments specifically suggesting that the Exchange has failed to provide sufficient information in the Original, Second, Third, Fourth, Fifth, or Sixth Proposed Rule Change to meets its burden to demonstrate its proposed fees are consistent with the requirements of the Exchange Act. As discussed, the three comment letters the Exchange did receive on its Original Filing and the Fourth and Seventh Proposed Rule Changes were all submitted by the same industry participant and consisted of conclusory statements and factual inaccuracies. More importantly, the Exchange received three *positive* comment letters from members (which the Exchange believes is rare with respect to fees), all of which expressed their support for the proposed fees; noting the belief that the fees were reasonable and encouraging the Commission to allow the fees to remain effective.[116]

Furthermore, the Exchange wishes to highlight that at least two market participants have in fact expanded their connectivity footprint since the implementation of the proposed fee changes. One of those market participants was a TPH that had discussed terminating its membership from the Exchange altogether prior to migration. However, after that TPH reviewed the notice the Exchange issued describing the proposed post-migration fees, the TPH relayed to the Exchange that it would instead remain a member and add logical connectivity in light of the cost savings it expected to realize due to the proposed changes. The Exchange believes this further demonstrates competition within the market for exchange connectivity, which as a result constrains fees the Exchange may charge for that connectivity. Another TPH, that prior to migration acted only as a proprietary trading firm, added the trading function as a Market-Maker on the Exchange (which required the purchase of additional trading permits and connectivity). The Exchange also notes that since migration, one TPH terminated its membership with the Exchange but retained its membership with 10 other SROs.[117] The Exchange believes the fact that only one TPH terminated in the past eleven months but retained its memberships at other options exchanges demonstrates the proposed fees are appropriate and reasonable and not unduly burdensome. While the TPH that did terminate did not specify to the Exchange why it ended its membership, if it had in fact determined that the Exchange's proposed connectivity fees did not make business sense for itself, for all the reasons discussed above, it was free to leave the Exchange at no cost and retain its membership with other SROs and/or pursue new memberships.

The proposed connectivity structure and corresponding fees, like the pre-migration connectivity structure and fees, continue to provide market participants flexibility with respect to how to connect to the Exchange based on each market participants' respective business needs. For example, the amount and type of physical and logical ports are determined by factors relevant and specific to each market participant, including its business model, costs of connectivity, how its business is segmented and allocated and volume of messages sent to the Exchange. Moreover, the Exchange notes that it

Exchange Act. Additionally, the Commission did not request additional data or discussion in connection with prior rule filings regarding connectivity fees, as it has with respect to the proposed fees in this filing (and its previous versions). In the absence of such an order, the Exchange presumes that its pre-migration fees were reasonable and consistent with the Exchange Act.

[111] *See e.g.,* Nasdaq PHLX and ISE Rules, General Equity and Options Rules, General 8. Phlx and ISE each charge a monthly fee of $2,500 for each 1Gb connection, $10,000 for each 10Gb connection and $15,000 for each 10Gb Ultra connection. *See also* Nasdaq Price List—Trading Connectivity. Nasdaq charges a monthly fee of $7,500 for each 10Gb direct connection to Nasdaq and $2,500 for each direct connection that supports up to 1Gb. *See also* NYSE American Fee Schedule, Section V.B, and Arca Fees and Charges, Co-Location Fees. NYSE American and Arca each charge a monthly fee of $5,000 for each 1Gb circuit, $14,000 for each 10Gb circuit and $22,000 for each 10Gb LX circuit.

[112] *See e.g.,* Affiliated Exchange Fee Schedules, Physical Connectivity Fees. For example, Cboe BZX, Cboe EDGX and C2 each charge a monthly fee of $2,500 for each 1Gb connection and $7,500 for each 10Gb connection.

[113] For the same reason noted above, the Exchange presumes that the fees of other exchanges, including its affiliates, are reasonable, as required by the Exchange Act in the absence of any suspension or disapproval order by the Commission providing otherwise.

[114] *See* Securities Exchange Act Release No. 83201 (May 9, 2018), 83 FR 22546 (May 15, 2018) (SR–C2–2018–006).

[115] *See* Exchange Notice ''Cboe Options Exchange Access and Capacity Fee Schedule Changes Effective October 1, 2019 and November 1, 2019'' Reference ID C2019081900.

[116] *See* Letters from Steve Crutchfield, Head of Market Structure, Chicago Trading Company (''CTC'') and William Ellington, Managing Member/CEO, X-Change Financial Access (''XFA'') to Vanessa Countryman, Secretary, Commission, dated August 27, 2020. *See also* Letter from Lakeshore Securities to Vanessa Countryman, Secretary, Commission, dated August 31, 2020.

[117] Two other Trading Permit Holders also terminated their respective memberships in the first quarter of 2020. The Exchange notes, however, that one TPH consolidated its membership with an affiliate and another TPH no longer appears to be a registered broker-dealer. In the second quarter, another TPH terminated its membership with the Exchange but similarly merged its business with another TPH. In August 2020, a TPH terminated its membership with the Exchange, along with all of its other SRO memberships as well. Lastly, in September 2020, two TPHs terminated their membership with the Exchange. One of those TPHs merged with another TPH and the other terminated its memberships with other options exchanges at the same time it terminated its membership with the Exchange.

does not have unlimited system capacity to support an unlimited number of order and quote entry per second. Accordingly, the proposed connectivity fees, and connectivity structure are designed to encourage market participants to be efficient with their respective physical and logical port usage. While the Exchange has no way of predicting with certainty the amount or type of connections market participants will in fact purchase, if any, the Exchange anticipates that like today, some market participants will continue to decline to connect and participate on the Exchange, some will participate on the Exchange via indirect connectivity, some will only purchase one physical connection and/or logical port connection, and others will purchase multiple connections.

In sum, the Exchange believes the proposed fees are reasonable and reflect a competitive environment, as the Exchange seeks to amend its access fees in connection with the migration of its technology platform, while still attracting market participants to continue to be, or become, connected to the Exchange.

Physical Ports

The Exchange believes increasing the fee for the new 10 Gb Physical Port is reasonable because unlike, the current 10 Gb Network Access Ports, the new Physical Ports provides a connection through a latency equalized infrastructure with faster switches and also allows access to both unicast order entry and multicast market data with a single physical connection. As discussed above, legacy Network Access Ports do not permit market participants to receive unicast and multicast connectivity. As such, in order to receive both connectivity types pre-migration, a market participant needed to purchase and maintain at least two 10 Gb Network Access Ports. The proposed Physical Ports not only provide latency equalization (*i.e.,* eliminate latency advantages between market participants based on location) as compared to the legacy ports, but also alleviate the need to pay for two physical ports as a result of needing unicast and multicast connectivity. Accordingly, market participants who historically had to purchase two separate ports for each of multicast and unicast activity, will be able to purchase only one port, and consequently pay lower fees overall. For example, pre-migration if a TPH had two 10 Gb legacy Network Access Ports, one of which received unicast traffic and the other of which received multicast traffic, that TPH would have been assessed $10,000 per month ($5,000 per port). Under the proposed rule change, using the new Physical Ports, that TPH has the option of utilizing one single port, instead of two ports, to receive both unicast and multicast traffic, therefore paying only $7,000 per month for a port that provides both connectivity types. The Exchange notes that pre-migration, approximately 50% of TPHs maintained two or more 10 Gb Network Access Ports. While the Exchange has no way of predicting with certainty the amount or type of connections market participants will in fact purchase post-migration, the Exchange anticipated approximately 50% of the TPHs with two or more 10 Gb Network Access Ports to reduce the number of 10 Gb Physical Ports that they purchase and expected the remaining 50% of TPHs to maintain their current 10 Gb Physical Ports, but reduce the number of 1 Gb Physical Ports. Particularly, pre-migration, a number of TPHs maintained two 10 Gb Network Access Ports to receive multicast data and two 1 Gb Network Access Ports for order entry (unicast connectivity). As the new 10 Gb Physical Ports are able to accommodate unicast connectivity (order entry), TPHs may choose to eliminate their 1 Gb Network Access Ports and utilize the new 10 Gb Physical Ports for both multicast and unicast connectivity. The Exchange notes that in February 2020, approximately 78% of TPHs that maintained a 1 Gb Network Access Port pre-migration, no longer maintained a 1 Gb Physical Port. Additionally, as of February 2020, approximately 44% reduced the quantity of 10 Gb Physical Ports they maintained as compared to pre-migration.

As discussed above, if a TPH deems a particular exchange as charging excessive fees for connectivity, such market participants may opt to terminate their connectivity arrangements with that exchange, and adopt a possible range of alternative strategies, including routing to the applicable exchange through another participant or market center or taking that exchange's data indirectly. Accordingly, if the Exchange charges excessive fees, it would stand to lose not only connectivity revenues but also revenues associated with the execution of orders routed to it, and, to the extent applicable, market data revenues. The Exchange believes that this competitive dynamic imposes powerful restraints on the ability of any exchange to charge unreasonable fees for physical connectivity. The Exchange also notes that the proposal represents an equitable allocation of reasonable dues, fees and other charges as its fees for physical connectivity are reasonably constrained by competitive alternatives, as discussed above. The proposed amounts are in line with, and in some cases lower than, the costs of physical connectivity at other Exchanges,[118] including the Cboe Affiliated Exchanges, which have the same connectivity infrastructure the Exchange has migrated to and some of which also offer exclusive products.[119] The Exchange does not believe it is unreasonable to assess fees that are in line with fees that have already been established for the same physical ports used to connect to the same connectivity infrastructure and common platform. The Exchange believes the proposed Physical Port fees are equitable and not unreasonably discriminatory as the connectivity pricing is associated with relative usage of the various market participants (including smaller participants) and the Exchange has not been presented with any evidence to suggest its proposed fee changes would impose a barrier to entry for participants, including smaller participants. In fact, as noted above, the Exchange is unaware of any market participant that has terminated direct connectivity solely as a result of the proposed fee changes. The Exchange also believes increasing the fee for 10 Gb Physical Ports and charging a higher fee as compared to the 1 Gb Physical Port is equitable as the 1 Gb Physical Port is 1/10th the size of the 10 Gb Physical Port and therefore does not offer access to many of the products and services offered by the Exchange (*e.g.,* ability to receive certain market data products). Thus the value of the 1 Gb alternative is lower than the value of the 10 Gb alternative, when measured based on the type of Exchange access it offers. Moreover, market participants that purchase 10 Gb Physical Ports utilize the most bandwidth and therefore consume the most resources from the

[118] *See e.g.,* Nasdaq PHLX and ISE Rules, General Equity and Options Rules, General 8. Phlx and ISE each charge a monthly fee of $2,500 for each 1Gb connection, $10,000 for each 10Gb connection and $15,000 for each 10Gb Ultra connection. *See also* Nasdaq Price List—Trading Connectivity. Nasdaq charges a monthly fee of $7,500 for each 10Gb direct connection to Nasdaq and $2,500 for each direct connection that supports up to 1Gb. *See also* NYSE American Fee Schedule, Section V.B, and Arca Fees and Charges, Co-Location Fees. NYSE American and Arca each charge a monthly fee of $5,000 for each 1Gb circuit, $14,000 for each 10Gb circuit and $22,000 for each 10Gb LX circuit.

[119] *See e.g.,* Affiliated Exchange Fee Schedules, Physical Connectivity Fees. For example, Cboe BZX, Cboe EDGX and C2 each charge a monthly fee of $2,500 for each 1Gb connection and $7,500 for each 10Gb connection.

network. As such, the Exchange believes the proposed fees for the 1 and 10 Gb Physical Ports, respectively are reasonably and appropriately allocated.

Data Port Fees

The Exchange believes assessing the data port fee per data source, instead of per port, is reasonable because it may allow for market participants to maintain more ports at a lower cost and applies uniformly to all market participants. The Exchange believes the proposed increase is reasonable because, as noted above, market participants may pay lower fees as a result of charging per data source and not per data port. Indeed, while the Exchange has no way of predicting with certainty the impact of the proposed changes, the Exchange had anticipated approximately 76% of the 51 market participants who pay data port fees to pay the same or lower fees upon implementation of the proposed change. As of December 2019, 46 market participants[120] pay the proposed data port fees, of which approximately 78% market participants are paying the same or lower fees in connection with the proposed change. Monthly savings for firms paying lower fees range from $500 to $6,000 per month. The Exchange also anticipated that 19% of TPHs who pay data port fees would pay a modest increase of only $500 per month. In December 2019, approximately 22% market participants paid higher fees, with the majority of those market participants paying a modest monthly increase of $500 and only 3 firms paying either $1,000 or $1,500 more per month. Additionally, as discussed above, the Exchange's affiliate C2 has the same fee which is also assessed at the proposed rate and assessed by data source instead of per port. The proposed name change is also appropriate in light of the Exchange's proposed changes and may alleviate potential confusion.

Logical Connectivity

Port fees

The Exchange believes it's reasonable to eliminate certain fees associated with legacy options for connecting to the Exchange and to replace them with fees associated with new options for connecting to the Exchange that are similar to those offered at its Affiliated Exchanges. In particular, the Exchange believes it's reasonable to no longer assess fees for CMI and FIX Login IDs because the Login IDs were retired and rendered obsolete upon migration and because the Exchange is proposing to replace them with fees associated with the new logical connectivity options. The Exchange believes that it is reasonable to harmonize the Exchange's logical connectivity options and corresponding connectivity fees now that the Exchange is on a common platform as its Affiliated Exchanges. Additionally, the Exchange notes the proposed fees are the same as, or in line with, the fees assessed on its Affiliated Exchanges for similar connectivity.[121] The proposed logical connectivity fees are also equitable and not unfairly discriminatory because the Exchange will apply the same fees to all market participants that use the same respective connectivity options.

The Exchange believes the proposed Logical Port fees are reasonable as it is the same fee for Drop Ports and the first five BOE/FIX Ports that is assessed for CMI and FIX Logins, which the Exchange is eliminating in lieu of logical ports. Additionally, while the proposed ports will be assessed the same monthly fees as current CMI/FIX Login IDs, the proposed logical ports provide for significantly more message traffic. Specifically, the proposed BOE/FIX Logical Ports will provide for 3 times the amount of quoting[122] capacity and approximately 165 times order entry capacity. Similarly, the Exchange believes the proposed BOE Bulk Port fees are reasonable because while the fees are higher than the CMI and FIX Login Id fees and the proposed Logical Port fees, BOE Bulk Ports offer significantly more bandwidth capacity than both CMI and FIX Login Ids and Logical Ports. Particularly, a single BOE Bulk Port offers 45 times the amount of quoting bandwidth than CMI/FIX Login Ids[123] and 5 times the amount of quoting bandwidth than Logical Ports will offer. Additionally, the Exchange believes that its fees for logical connectivity are reasonable, equitable, and not unfairly discriminatory as they are designed to ensure that firms that use the most capacity pay for that capacity, rather than placing that burden on market participants that have more modest needs. Although the Exchange charges a ''per port'' fee for logical connectivity, it notes that this fee is in effect a capacity fee as each FIX, BOE or BOE Bulk port used for order/quote entry supports a specified capacity (*i.e.,* messages per second) in the matching engine, and firms purchase additional logical ports when they require more capacity due to their business needs.

An obvious driver for a market participant's decision to purchase multiple ports will be their desire to send or receive additional levels of message traffic in some manner, either by increasing their total amount of message capacity available, or by segregating order flow for different trading desks and clients to avoid latency sensitive applications from competing for a single thread of resources. For example, a TPH may purchase one or more ports for its market making business based on the amount of message traffic needed to support that business, and then purchase separate ports for proprietary trading or customer facing businesses so that those businesses have their own distinct connection, allowing the firm to send multiple messages into the Exchange's trading system in parallel rather than sequentially. Some TPHs that provide direct market access to their customers may also choose to purchase separate ports for different clients as a service for latency sensitive customers that desire the lowest possible latency to improve trading performance. Thus, while a smaller TPH that demands more limited message traffic may connect through a service bureau or other service provider, or may choose to purchase one or two logical ports that are billed at a rate of $750 per month each, a larger market participant with a substantial and diversified U.S. options business may opt to purchase additional ports to support both the volume and types of activity that they conduct on the Exchange. While the Exchange has no way of predicting with certainty the amount or type of logical ports market participants will in fact purchase post-migration, the Exchange anticipated approximately 16% of TPHs to purchase one to two logical ports, and approximately 22% of TPHs to not purchase any logical ports. In December 2019, 13% of TPHs purchased one to two logical ports and 27% have not purchased any logical ports. At the same time, market participants that desire more total capacity due to their business needs, or that wish to segregate order flow by purchasing separate capacity allocations to reduce latency or for other operational reasons, would be permitted to choose to purchase such additional capacity at the same marginal cost. The Exchange believes the proposal to assess an additional Logical and BOE Bulk port fee for incremental usage per logical port is reasonable because the proposed

[120] The Exchange notes the reduction in market participants that pay the data port fee is due to firm consolidations and acquisitions.

[121] *See* Affiliated Exchange Fee Schedules, Logical Port Fees.

[122] Based on the purchase of a single Market-Maker Trading Permit or Bandwidth Packet.

[123] Based on the purchase of a single Market-Maker Trading Permit or Bandwidth Packet.

fees are modestly higher than the proposed Logical Port and BOE Bulk fees and encourage users to mitigate message traffic as necessary. The Exchange notes one of its Affiliated Exchanges has similar implied port fees.[124]

In sum, the Exchange believes that the proposed BOE/FIX Logical Port and BOE Bulk Port fees are appropriate as these fees would ensure that market participants continue to pay for the amount of capacity that they request, and the market participants that pay the most are the ones that demand the most resources from the Exchange. The Exchange also believes that its logical connectivity fees are aligned with the goals of the Commission in facilitating a competitive market for all firms that trade on the Exchange and of ensuring that critical market infrastructure has ''levels of capacity, integrity, resiliency, availability, and security adequate to maintain their operational capability and promote the maintenance of fair and orderly markets.'' [125]

The Exchange believes waiving the FIX/BOE Logical Port fee for one FIX Logical Port used to access PULSe and Silexx (for FLEX Trading) is reasonable because it will allow all TPHs using PULSe and Silexx to avoid having to pay a fee that they would otherwise have to pay. The waiver is equitable and not unfairly discriminatory because TPHs using PULSe are already subject to a monthly fee for the PULSe Workstation, which the Exchange views as inclusive of fees to access the Exchange. Moreover, while PULSe users today do not require a FIX/CMI Login Id, post-migration, due to changes to the connectivity infrastructure, PULSe users will be required to maintain a FIX Logical Port and as such incur a fee they previously would not have been subject to. Similarly, the Exchange believes that the waiver for Silexx (for FLEX trading) will encourage TPHs to transact business using FLEX Options using the new Silexx System and encourage trading of FLEX Options. Additionally, the Exchange notes that it currently waives the Login Id fees for Login IDs used to access the CFLEX system.

The Exchange believes its proposed fee for Purge Ports is reasonable as it is also in line with the amount assessed for purge ports offered by its Affiliated Exchanges, as well as other exchanges.[126] Moreover, the Exchange believes that offering purge port functionality at the Exchange level promotes robust risk management across the industry, and thereby facilitates investor protection. Some market participants, and, in particular, larger firms, could build similar risk functionality on their trading systems that permit the flexible cancellation of orders entered on the Exchange. Offering Exchange level protections however, ensures that such functionality is widely available to all firms, including smaller firms that may otherwise not be willing to incur the costs and development work necessary to support their own customized mass cancel functionality. The Exchange operates in a highly competitive market in which exchanges offer connectivity and related services as a means to facilitate the trading activities of TPHs and other participants. As the proposed Purge Ports provide voluntary risk management functionality, excessive fees would simply serve to reduce demand for this optional product. The Exchange also believes that the proposed Purge Port fees are not unfairly discriminatory because they will apply uniformly to all TPHs that choose to use dedicated Purge Ports. The proposed Purge Ports are completely voluntary and, as they relate solely to optional risk management functionality, no TPH is required or under any regulatory obligation to utilize them. The Exchange believes that adopting separate fees for these ports ensures that the associated costs are borne exclusively by TPHs that determine to use them based on their business needs, including Market-Makers or similarly situated market participants. Similar to Purge Ports, Spin and GRP Ports are optional products that provide an alternative means for market participants to receive multicast data and request and receive a retransmission of such data. As such excessive fees would simply serve to reduce demand for these products, which TPHs are under no regulatory obligation to utilize. All TPHs that voluntarily select these service options (*i.e.,* Purge Ports, Spin Ports or GRP Ports) will be charged the same amount for the same respective services. All TPHs have the option to select any connectivity option, and there is no differentiation among TPHs with regard to the fees charged for the services offered by the Exchange.

Access Credits

The Exchange believes the proposal to adopt credits for BOE Bulk Ports is reasonable, equitable and not unfairly discriminatory because it provides an opportunity for TPHs to pay lower fees for logical connectivity. The Exchange notes that the proposed credits are in lieu of the current credits that Market-Makers are eligible to receive today for Trading Permits fees. Although only Market-Makers may receive the proposed BOE Bulk Port credits, Market-Makers are valuable market participants that provide liquidity in the marketplace and incur costs that other market participants do not incur. For example, Market-Makers have a number of obligations, including quoting obligations and fees associated with appointments that other market participants do not have. The Exchange also believes that the proposals provide incremental incentives for TPHs to strive for the higher tier levels, which provide increasingly higher benefits for satisfying increasingly more stringent criteria, including criteria to provide more liquidity to the Exchange. The Exchange believes the value of the proposed credits is commensurate with the difficulty to achieve the corresponding tier thresholds of each program.

First, the Exchange believes the proposed BOE Bulk Port fee credits provided under AVP will incentivize the routing of orders to the Exchange by TPHs that have both Market-Maker and agency operations, as well as incent Market-Makers to continue to provide critical liquidity notwithstanding the costs incurred with being a Market-Maker. More specifically, in the options industry, many options orders are routed by consolidators, which are firms that have both order router and Market-Maker operations. The Exchange is aware not only of the importance of providing credits on the order routing side in order to encourage the submission of orders, but also of the operations costs on the Market-Maker side. The Exchange believes the proposed change to AVP continues to allow the Exchange to provide relief to the Market-Maker side via the credits, albeit credits on BOE Bulk Port fees instead of Trading Permit fees. Additionally, the proposed credits may incentivize and attract more volume and liquidity to the Exchange, which will benefit all Exchange participants through increased opportunities to trade as well as enhancing price discovery. While the Exchange has no way of

[124] *See e.g.,* Cboe C2 Options Exchange Fees Schedule, Logical Connectivity Fees.

[125] *See* Securities Exchange Act Release No. 73639 (November 19, 2014), 79 FR 72251 (December 5, 2014) (File No. S7–01–13) (Regulation SCI Adopting Release).

[126] *See* Affiliated Exchange Fee Schedules, Logical Port Fees. *See also,* Nasdaq ISE Pricing Schedule, Section 7(C). ISE charges a fee of $1,100 per month for SQF Purge Ports.

predicting with certainty how many and which TPHs will satisfy the required criteria to receive the credits, the Exchange had anticipated approximately two TPHs (out of approximately 5 TPHs that are eligible for AVP) to reach VIP Tiers 4 or 5 and consequently earn the BOE Bulk Port fee credits for their respective Market-Maker affiliate. For the month of October 2019, two TPHs received access credits under Tier 5 and no TPHs received credits under Tier 4. The Exchange notes that it believes its reasonable, equitable and not unfairly discriminatory to no longer provide access credits for Market-Makers whose affiliates achieve VIP Tiers 2 or 3 as the Exchange has adopted another opportunity for all Market-Makers, not just Market-Makers that are part of a consolidator, to receive credits on BOE Bulk Port fees (*i.e.,* credits available via the proposed Market-Maker Access Credit Program). More specifically, limiting the credits under AVP to the top two tiers enables the Exchange to provide further credits under the new Market-Maker Access Credit Program. Furthermore, the Exchange notes that it is not required to provide any credits at any tier level.

The Exchange believes the proposed BOE Bulk Port fee credits available for TPHs that reach certain Performance Tiers under the Liquidity Provider Sliding Scale Adjustment Table is reasonable as the credits provide for reduced connectivity costs for those Market-Makers that reach the required thresholds. The Exchange believe it's reasonable, equitable and not unfairly discriminatory to provide credits to those Market-Makers that primarily provide and post liquidity to the Exchange, as the Exchange wants to continue to encourage Market-Makers with significant Make Rates to continue to participate on the Exchange and add liquidity. Greater liquidity benefits all market participants by providing more trading opportunities and tighter spreads.

Moreover, the Exchange notes that Market-Makers with a high Make Rate percentage generally require higher amounts of capacity than other Market-Makers. Particularly, Market-Makers with high Make Rates are generally streaming significantly more quotes than those with lower Make Rates. As such, Market-Makers with high Make Rates may incur more costs than other Market-Makers as they may need to purchase multiple BOE Bulk Ports in order to accommodate their capacity needs. The Exchange believes the proposed credits for BOE Bulk Ports encourages Market-Makers to continue to provide liquidity for the Exchange, notwithstanding the costs incurred by purchasing multiple ports. Particularly, the proposal is intended to mitigate the costs incurred by traditional Market-Makers that focus on adding liquidity to the Exchange (as opposed to those that provide and take, or just take). While the Exchange cannot predict with certainty which Market-Makers will reach Performance Tiers 4 and 5 each month, based on historical performance it anticipated approximately 10 Market-Makers would achieve Tiers 4 or 5. In October 2019, 12 Market-Makers achieved Tiers 4 or 5. Lastly, the Exchange notes that it is common practice among options exchanges to differentiate fees for adding liquidity and fees for removing liquidity.[127]

Bandwidth Packets and CMI CAS Server Fees

The Exchange believes it's reasonable to eliminate Bandwidth Packet fees and the CMI CAS Server fee because TPHs will not pay fees for these connectivity options and because Bandwidth Packets and CAS Servers have been retired and rendered obsolete as part of the migration. The Exchange believes that even though it will be discontinuing Bandwidth Packets, the proposed incremental pricing for Logical Ports and BOE Bulk Ports will continue to encourage users to mitigate message traffic. The proposed change is equitable and not unfairly discriminatory because it will apply uniformly to all TPHs.

Access Fees

The Exchange believes the restructuring of its Trading Permits is reasonable in light of the changes to the Exchange's connectivity infrastructure in connection with the migration and the resulting separation of bandwidth allowance, logins and appointment costs from each Trading Permit. The Exchange also believes that it is reasonable to harmonize the Exchange's Trading Permit structure and corresponding connectivity options to more closely align with the structures offered at its Affiliated Exchanges once the Exchange is on a common platform as its Affiliated Exchanges.[128] The proposed Trading Permit structure and corresponding fees are also in line with the structure and fees provided by other exchanges. The proposed Trading Permit fees are also equitable and not unfairly discriminatory because the Exchange will apply the same fees to all market participants that use the same type and number of Trading Permits.

With respect to electronic Trading Permits, the Exchange notes that TPHs previously requested multiple Trading Permits because of bandwidth, login or appointment cost needs. As described above, in connection with migration, bandwidth, logins and appointment costs are no longer tied to Trading Permits or Bandwidth Packets and as such, the need to hold multiple permits and/or Bandwidth Packets is obsolete. As such, the Exchange believes the structure to require only one of each type of applicable electronic Trading Permit is appropriate. Moreover, the Exchange believes offering separate marketing making permits for off-floor and on-floor Market-Makers provides for a cleaner, more streamlined approach to trading permits and corresponding fees. Other exchanges similarly provide separate and distinct fees for Market-Makers that operate on-floor vs off-floor and their corresponding fees are similar to those proposed by the Exchange.[129]

The Exchange believes the proposed fee for its MM EAP Trading Permits is reasonable as it is the same fee it assesses today for Market-Maker Trading Permits (*i.e.,* $5,000 per month per permit). Additionally, the proposed fee is in line with, and in some cases even lower than, the amounts assessed for similar access fees at other exchanges, including its affiliate C2.[130] The Exchange believes the proposed EAP fee is also reasonable, and in line with the fees assessed by other Exchanges for non-Market-Maker electronic access.[131] The Exchange notes that while the Trading Permit fee is increasing, TPHs overall cost to

[127] *See e.g.,* MIAX Options Fees Schedule, Section 1(a), Market Maker Transaction Fees.

[128] For example, the Exchange's affiliate, C2, similarly provides for Trading Permits that are not tied to connectivity, and similar physical and logical port options at similar pricings. *See* Cboe C2 Options Exchange Fees Schedule. Physical connectivity and logical connectivity are also not tied to any type of permits on the Exchange's other options exchange affiliates.

[129] *See e.g.,* PHLX Section 8A, Permit and Registration Fees. *See also,* BOX Options Fee Schedule, Section IX Participant Fees; NYSE American Options Fees Schedule, Section III(A) Monthly ATP Fees and NYSE Arca Options Fees and Charges, OTP Trading Participant Rights. For similar Trading Floor Permits for Floor Market Makers, Nasdaq PHLX charges $6,000; BOX charges up to $5,500 for 3 registered permits in addition to a $1,500 Participant Fee, NYSE Arca charges up to $6,000; and NYSE American charges up to $8,000.

[130] *See e.g.,* Cboe C2 Options Exchange Fees Schedule. *See also,* NYSE Arca Options Fees and Charges, General Options and Trading Permit (OTP) Fees, which assesses up to $6,000 per Market Maker OTP and NYSE American Options Fee Schedule, Section III. Monthly ATP Fees, which assess up to $8,000 per Market Maker ATP. *See also,* PHLX Section 8A, Permit and Registration Fees, which assesses up to $4,000 per Market Maker Permit.

[131] *See e.g.,* PHLX Section 8A, Permit and Registration Fees, which assesses up to $4,000 per Permit for all member and member organizations other than Floor Specialists and Market Makers.

access the Exchange may be reduced in light of the fact that a TPH no longer must purchase multiple Trading Permits, Bandwidth Packets and Login Ids in order to receive sufficient bandwidth and logins to meet their respective business needs. To illustrate the value of the new connectivity infrastructure, the Exchange notes that the cost that would be incurred by a TPH today in order to receive the same amount of order capacity that will be provided by a single Logical Port post-migration (*i.e.,* 5,000 orders per second), is approximately 98% higher than the cost for the same capacity post-migration. The following examples further demonstrate potential cost savings/value added for an EAP holder with modest capacity needs and an EAP holder with larger capacity needs:

TPH THAT HOLDS 1 EAP, NO BANDWIDTH PACKETS AND 1 CMI LOGIN

	Current fee structure	Post-migration fee structure
EAP	$1,600	$3,000.
CMI Login/Logical Port	$750	$750.
Bandwidth Packets	0	N/A.
Total Bandwidth Available	30 orders/sec	5,000 orders/sec.
Total Cost	$2,350	$3,750.
Total Cost per message	$78.33/order/sec	$0.75/order/sec.

TPH THAT HOLDS 1 EAP, 4 BANDWIDTH PACKETS AND 15 CMI LOGINS

	Current fee structure	Post-migration fee structure
EAP	$1,600	$3,000.
CMI Login/Logical Port	$11,250 (15@750)	$750.
Bandwidth Packets	$6,400 (4@$1,600)	N/A.
Total Bandwidth Available	150 orders/sec	5,000 orders/sec.
Total Cost	$19,250	$3,750.
Total Cost per message	$128.33/order/sec	$0.75/order/sec.

The Exchange believes the proposal to adopt a new Clearing TPH Permit is reasonable because it offers TPHs that only clear transactions of TPHs a discount. Particularly, Clearing TPHs that also submit orders electronically to the Exchange would purchase the proposed EAP at $3,000 per permit. The Exchange believe it's reasonable to provide a discount to Clearing TPHs that only clear transactions and do not otherwise submit electronic orders to the Exchange. The Exchange notes that another exchange similarly charges a separate fee for clearing firms.[132]

The Exchange believes the proposed fee structure for on-floor Market-Makers is reasonable as the fees are in line with those offered at other Exchanges.[133] The Exchange believes that the proposed fee for MM Floor Permits as compared to MM EAPs is reasonable because it is only modestly higher than MM EAPs and Floor MMs don't have other costs that MM EAP holders have, such as MM EAP Appointment fees.

The Exchange believes its proposed fees for Floor Broker Permits are reasonable because the fees are similar to, and in some cases lower than, the fees the Exchange currently assesses for such permits. Specifically, based on the number of Trading Permits TPHs held upon migration, 60% of TPHs that hold Floor Broker Trading Permits will pay lower Trading Permit fees. Particularly, any Floor Broker holding ten or less Floor Broker Trading Permits will pay lower fees under the proposed tiers as compared to what they pay today. While the remaining 40% of TPHs holding Floor Broker Trading Permits (who each hold between 12–21 Floor Broker Trading Permits) will pay higher fees, the Exchange notes the monthly increase is de minimis, ranging from an increase of 0.6%–2.72%.[134]

The Exchange believes the proposed ADV Discount is reasonable because it provides an opportunity for Floor Brokers to pay lower FB Trading Permit fees, similar to the current rebate program offered to Floor Brokers. The Exchange notes that while the new ADV Discount program includes only customer volume (''C'' origin code) as compared to Customer and Professional Customer/Voluntary Professional, the amount of Professional Customer/Voluntary Professional volume was de minimis and the Exchange does not believe the absence of such volume will have a significant impact.[135] Additionally, the Exchange notes that while the ADV requirements under the proposed ADV Discount program are higher than are required under the current rebate program, the proposed ADV Discount counts volume from all products towards the thresholds as compared to the current rebate program which excludes volume from Underlying Symbol List A (except RLG, RLV, RUI, and UKXM), DJX, XSP, and subcabinet trades. Moreover, the ADV Discount is designed to encourage the execution of orders in all classes via open outcry, which may increase volume, which would benefit all market participants (including Floor Brokers who do not hit the ADV thresholds) trading via open outcry (and indeed, this increased volume could make it possible for some Floor Brokers to hit the ADV thresholds). The Exchange believes the proposed discounts are equitable and not unfairly discriminatory because all Floor Brokers are eligible. While the Exchange has no way of predicting with certainty how many and which TPHs will satisfy the various thresholds under the ADV Discount, the Exchange anticipated approximately 3 Floor Brokers to receive a rebate under the program. In December 2019, 2 Floor Brokers received a rebate under the program.

The Exchange believes its proposed MM EAP Appointment fees are reasonable in light of the Exchange's elimination of appointment costs tied to Trading Permits. Other exchanges also

[132] *See e.g.,* NYSE Arca Options Fees and Charges, General Options and Trading Permit (OTP) Fees and NYSE American Options Fee Schedule, Section III. Monthly ATP Fees.

[133] *See e.g.,* PHLX Section 8A, Permit and Registration Fees, which assesses $6,000 per permit for Floor Specialists and Market Makers.

[134] The Floor Brokers whose fees are increasing have each committed to a minimum number of permits and therefore currently receive the rates set forth in the current Floor Broker TP Sliding Scale.

[135] Furthermore, post-migration the Exchange will not have Voluntary Professionals.

offer a similar structure with respect to fees for appointment classes.[136] Additionally, the proposed MM EAP Appointment fee structure results in approximately 36% electronic MMs paying lower fees for trading permit and appointment costs. For example, in order to have the ability to make electronic markets in every class on the Exchange, a Market-Maker would need 1 Market-Maker Trading Permit and 37 Appointment Units post-migration. Under, the current pricing structure, in order for a Market-Maker to quote the entire universe of available classes, a Market-Maker would need 33 Appointment Credits, thus necessitating 33 Market-Maker Trading Permits. With respect to fees for Trading Permits and Appointment Unit Fees, under the proposed pricing structure, the cost for a TPH wishing to quote the entire universe of available classes is approximately 29% less (if they are not eligible for the MM TP Sliding Scale) or approximately 2% less (if they are eligible for the MM TP Sliding Scale). To further demonstrate the potential cost savings/value added, the Exchange is providing the following examples comparing current Market-Maker connectivity and access fees to projected connectivity and access fees for different scenarios. The Exchange notes that the below examples not only compare Trading Permit and Appointment Unit costs, but also the cost incurred for logical connectivity and bandwidth. Particularly, the first example demonstrates the total minimum cost that would be incurred today in order for a Market-Maker to have the same amount of capacity as a Market-Maker post-migration that would have only 1 MM EAP and 1 Logical Port (*i.e.,* 15,000 quotes/3 sec). The Exchange is also providing examples that demonstrate the costs of (i) a Market-Maker with small capacity needs and appointment unit of 1.0 and (ii) a Market-Maker with large capacity needs and appointment cost/unit of 30.0:

MARKET-MAKER THAT NEEDS CAPACITY OF 15,000/QUOTES/3 SECONDS

	Current fee structure	Post-migration fee structure
MM Permit/MM EAP	$5,000	$5,000.
Appointment Unit Cost	N/A (1 appointment cost)	$0 (1 appointment unit).
CMI Login/Logical Port	$750 [137]	$750.
Bandwidth Packets	$5,500 (2@$2,750)	N/A.
Total Bandwidth Available	15,000 quotes/3 sec	15,000 quotes/3 sec.
Total Cost	$11,250	$5,750.
Total Cost per message allowed	$0.75/quote/3 sec	$0.38/quote/3 sec.

MARKET MAKER THAT NEEDS CAPACITY OF NO MORE THAN 5,000 QUOTES/3 SECS

	Current fee structure	Post-migration fee structure
MM Permit/MM EAP	$5,000	$5,000.
Appointment Unit Cost	N/A (1 appointment cost)	$0 (1 appointment unit).
CMI Login/Logical Port	$750	$750.
Bandwidth Packets	0	N/A.
Total Bandwidth Available	5,000 quotes/3 sec	15,000 quotes/3 sec.
Total Cost	$5,750	$5,750.
Total Cost per message allowed	$1.15/quote/3 sec	$0.38/quote/3 sec.

MARKET-MAKER THAT NEEDS 30 APPOINTMENT UNITS AND CAPACITY OF 300,000 QUOTES/3 SEC

	Current fee structure	Post-migration fee structure
MM Permits/MM EAP	$105,000 (30 MM Permits assumes eligible for MM TP Sliding Scale) [138].	$5,000.
Appointment Units Cost	N/A (30 appointment costs)	$95,500 (30 appointment units).
CMI Logins/BOE Bulk Port	$3,000 (4@$750) [139]	$3,000 (2 BOE Bulk@$1,500).
Bandwidth Packets	$82,500 (30@$2750)	N/A.
Total Bandwidth Available	300,000 quotes/3 sec	* 450,000 quotes/3 sec.
Total Cost	$190,500	$103,500.
Total Cost per message allowed	$0.63/quotes/3 sec	$0.23/quote/3 sec.

* Possible performance degradation at 15,000 messages per second.

The Exchange believes its proposal to provide separate fees for Tier Appointments for MM EAPs and MM Floor Permits as the Exchange will be issuing separate Trading Permits for on-floor and off-floor market making as discussed above. The proposal to eliminate the volume threshold for the electronic SPX Tier Appointment fee is reasonable as no TPHs in the past several months have electronically traded more than 1 SPX contract or less than 100 SPX contracts per month and therefore will not be negatively impacted by the proposed change, and because it aligns the electronic SPX Tier Appointment with the floor SPX Tier Appointment, which has no volume

[136] *See e.g.,* PHLX Section 8. Membership Fees, B, Streaming Quote Trader (''SQT'') Fees and C. Remote Market Maker Organization (RMO) Fee.

[137] The maximum quoting bandwidth that may be applied to a single Login Id is 80,000 quotes/3 sec.

[138] For simplicity of the comparison, this assumes no appointments in SPX, VIX, RUT, XEO or OEX (which are not included in the TP Sliding Scale).

[139] Given the bandwidth limit per Login Id of 80,000 quotes/3 sec, example assumes Market-Maker purchases minimum amount of Login IDs to accommodate 300,000 quotes/3 sec.

threshold. The Exchange believes the proposal to increase the electronic volume thresholds for VIX and RUT are reasonable as those that do not regularly trade VIX or RUT in open-outcry will continue to not be assessed the fee. In fact, any TPH that executes more than 100 contracts but less than 1,000 in the respective classes will no longer have to pay the proposed Tier Appointment fee. As noted above, the Exchange is not proposing to change the amounts assessed for each Tier Appointment Fee. The proposed change is equitable and not unfairly discriminatory because it will apply uniformly to all TPHs.

Trading Permit Holder Regulatory Fee

The Exchange believes it's reasonable to eliminate the Trading Permit Holder Regulatory fee because TPHs will not pay this fee and because the Exchange is restructuring its Trading Permit structure. The Exchange notes that although it will less closely be covering the costs of regulating all TPHs and performing its regulatory responsibilities, it still has sufficient funds to do so. The proposed change is equitable and not unfairly discriminatory because it will apply uniformly to all TPHs.

The Exchange believes corresponding changes to eliminate obsolete language in connection with the proposed changes described above and to relocate and reorganize its fees in connection with the proposed changes maintain clarity in the Fees Schedule and alleviate potential confusion, thereby removing impediments to and perfecting the mechanism of a free and open market and a national market system, and, in general, protecting investors and the public interest.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

With respect to intra-market competition, the Exchange does not believe that the proposed rule change would place certain market participants at the Exchange at a relative disadvantage compared to other market participants or affect the ability of such market participants to compete. As stated above, the Exchange does not believe its proposed pricing will impose a barrier to entry to smaller participants and notes that its proposed connectivity pricing is associated with relative usage of the various market participants. For example, market participants with modest capacity needs can buy the less expensive 1 Gb Physical Port and utilize only one Logical Port. Moreover, the pricing for 1 Gb Physical Ports and FIX/BOE Logical Ports are no different than are assessed today (*i.e.,* $1,500 and $750 per port, respectively), yet the capacity and access associated with each is greatly increasing. While pricing may be increased for larger capacity physical and logical ports, such options provide far more capacity and are purchased by those that consume more resources from the network. Accordingly, the proposed connectivity fees do not favor certain categories of market participants in a manner that would impose a burden on competition; rather, the allocation reflects the network resources consumed by the various size of market participants—lowest bandwidth consuming members pay the least, and highest bandwidth consuming members pays the most, particularly since higher bandwidth consumption translates to higher costs to the Exchange.

The Exchange also does not believe that the proposed rule change will result in any burden on inter-market competition that is not necessary or appropriate in furtherance of the purposes of the Act. As discussed in the Statutory Basis section above, options market participants are not forced to connect to (or purchase market data from) all options exchanges, as shown by the number of TPHs at Cboe and shown by the fact that there are varying number of members across each of Cboe's Affiliated Exchanges. The Exchange operates in a highly competitive environment, and as discussed above, its ability to price access and connectivity is constrained by competition among exchanges and third parties. As discussed, there are other options markets of which market participants may connect to trade options. There is also a possible range of alternative strategies, including routing to the exchange through another participant or market center or accessing the Exchange indirectly. For example, there are 15 other U.S. options exchanges, which the Exchange must consider in its pricing discipline in order to compete for market participants. In this competitive environment, market participants are free to choose which competing exchange or reseller to use to satisfy their business needs. As a result, the Exchange believes this proposed rule change permits fair competition among national securities exchanges. Accordingly, the Exchange does not believe its proposed fee change imposes any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

The Exchange neither solicited nor received written comments on the proposed rule change.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

The foregoing rule change has become effective pursuant to Section 19(b)(3)(A) of the Act [140] and paragraph (f) of Rule 19b–4 [141] thereunder. At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission will institute proceedings to determine whether the proposed rule change should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov.* Please include File Number SR–CBOE–2020–105 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549–1090.

All submissions should refer to File Number SR–CBOE–2020–105. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's internet website (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements

[140] 15 U.S.C. 78s(b)(3)(A).

[141] 17 CFR 240.19b–4(f).

with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street NE, Washington, DC 20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of such filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change. Persons submitting comments are cautioned that we do not redact or edit personal identifying information from comment submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–CBOE–2020–105, and should be submitted on or before December 1, 2020.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[142]

J. Matthew DeLesDernier,

Assistant Secretary.

[FR Doc. 2020–24884 Filed 11–9–20; 8:45 am]

BILLING CODE 8011–01–P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–90339; File No. SR–Phlx–2020–50]

Self-Regulatory Organizations; Nasdaq PHLX LLC; Notice of Filing and Immediate Effectiveness of Proposed Rule Change To Amend the Exchange's Transaction Fees at Equity 7, Section 3

November 4, 2020.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (''Act''),[1] and Rule 19b–4 thereunder,[2] notice is hereby given that on October 26, 2020, Nasdaq PHLX LLC (''Phlx'' or ''Exchange'') filed with the Securities and Exchange Commission (''SEC'' or ''Commission'') the proposed rule change as described in Items I, II, and III below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange proposes to amend the Exchange's transaction fees at Equity 7, Section 3, as discussed below.

The text of the proposed rule change is available on the Exchange's website at *https://listingcenter.nasdaq.com/rulebook/phlx/rules,* at the principal office of the Exchange, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

During the week of October 26–30, 2020, the Exchange will temporarily relocate its place of primary operations from Carteret, New Jersey to Chicago, Illinois. The purpose of this temporary relocation is to demonstrate that the Exchange is capable of and willing to operate outside of the State of New Jersey in the event that the New Jersey State Government enacts pending legislation that would impose a tax on securities transactions processed within the State. If enacted, the tax would be prohibitively expensive and onerous, not only for the Exchange, but also for its member organizations and ultimately for investors, and the Exchange likely would have no option but to relocate permanently outside of New Jersey.

Although the Exchange believes that its member organizations will maintain their ordinary trading activity during the relocation period, the Exchange also recognizes the possibility that some of its member organizations will adjust their trading behavior during this time, and that if they do so, they may fail to qualify for credits or discounted charges that the Exchange would otherwise provide to them if they were to achieve certain threshold levels of total Consolidated Volume[3] on the Exchange during the month.

To help minimize any adverse impact of the temporary relocation on member organizations, Exchange proposes to amend its pricing schedule at Equities 7, Section 3 to state that for purposes of determining which of the execution charges and credits listed therein a member organization qualifies for during the month of October 2020, the Exchange will calculate the member organization's total Consolidated Volume on the Exchange for the full month of October as well as for the month of October excluding the week of October 26–30, 2020. Furthermore, the Exchange proposes to state that it will then assess which total Consolidated Volume calculations would qualify the member organization for the most advantageous credits and charges for the month of October and then it will apply those credits and charges to the member organization. Thus, if but for the relocation, a member organization would qualify for a higher credit or a lower fee tier in October, then the Exchange will apply that higher credit or lower fee tier to the member organization's trading activity during the month.

2. Statutory Basis

The Exchange believes that its proposal is consistent with Section 6(b) of the Act,[4] in general, and furthers the objectives of Sections 6(b)(4) and 6(b)(5) of the Act,[5] in particular, in that it provides for the equitable allocation of reasonable dues, fees and other charges among members and issuers and other persons using any facility, and is not designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

The Exchange believes that the proposal is reasonable and equitable because in its absence, member organizations may fail to qualify for certain volume-based credits or charges in October should they determine to alter their trading behavior when the Exchange relocates to Chicago during the week of October 26–30, 2020. The Exchange does not wish to penalize these member organizations for altering their trading behavior in response to the Exchange's decision to relocate

[142] 17 CFR 200.30–3(a)(12).

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

[3] As set forth in Equity 7, Section 3(a)(1), the term ''Consolidated Volume'' means the total consolidated volume reported to all consolidated transaction reporting plans by all exchanges and trade reporting facilities during a month in equity securities, excluding executed orders with a size of less than one round lot.

[4] 15 U.S.C. 78f(b).

[5] 15 U.S.C. 78f(b)(4) and (5).