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SECURITIES AND EXCHANGE COMMISSION
[Release No. 34-95299; File No. SR-MEMX-2022-17]

Self-Regulatory Organizations; MEMX LLC; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change to Amend the Exchange's Fee Schedule Concerning Connectivity Fees

July 15, 2022.

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 July 5, 2022, MEMX LLC ("MEMX" or the "Exchange") 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 Substance of the Proposed Rule Change

The Exchange is filing with the Commission a proposed rule change to amend the Exchange's fee schedule applicable to Members[3] and non-Members (the "Fee Schedule") pursuant to Exchange Rules 15.1(a) and (c). The Exchange proposes to implement the changes to the Fee Schedule pursuant to this proposal immediately. The text of the proposed rule change is provided in Exhibit 5.

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,

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

2 17 CFR 240.19b-4.

3 See Exchange Rule 1.5(p).

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

Background

The Exchange is re-filing its proposal to amend the Fee Schedule regarding fees the Exchange charges to Members and non-Members for physical connectivity to the Exchange and for application sessions (otherwise known as "logical ports") that a Member utilizes in connection with their participation on the Exchange (together with physical connectivity, collectively referred to in this proposal as "connectivity services," as described in greater detail below and in Exhibit 5). The Exchange is proposing to implement the proposed fees immediately.

The Exchange filed its Initial Proposal on December 30, 2021,[4] and began charging fees for connectivity services for the first time in January of 2022. On February 28, 2022, the Commission suspended the Initial Proposal and asked for comments on several questions.[5] The Exchange then filed the Second Proposal, which was subsequently withdrawn and replaced with the Third Proposal. The Exchange has collected fees for connectivity services for six months now and is thus able to supplement its filing with additional details that were not available at the

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4 The Exchange received one comment letter on the Initial Proposal, which asserted that the Exchange did not address the Exchange's ownership structure and that revenues from connectivity services could have a "disparate impact" on certain Members. See Letter from Tyler Gellasch, Healthy Markets Association, dated January 26, 2022. The Exchange notes that the ownership of an exchange by members is not unprecedented and that the ownership structure of the Exchange and related issues were addressed during the process of the Exchange's registration as a national securities exchange. See Securities Exchange Act Release No. 88806 (May 4, 2020), 85 FR 27451 (May 8, 2020) (approval order related to the application of MEMX LLC to register as a national securities exchange). The Exchange does not believe that the Initial Proposal or this proposal raises any new issues that have not been previously addressed.

5 See Securities Exchange Act Release No. 94332 (February 28, 2022) (SR-MEMX-2021-22) (Suspension of and Order Instituting Proceedings to Determine Whether to Approve or Disapprove Proposed Rule Change to Amend the Exchange's Fee Schedule to Adopt Connectivity Fees) (the "OIP").

time of filing of the Initial Proposal, the Second Proposal, or the Third Proposal and is also able to respond to certain questions raised in the OIP. As set forth below, the Exchange believes that both the Initial Proposal, the Second Proposal, and the Third Proposal provided a great deal of transparency regarding the cost of providing connectivity services and anticipated revenue and that each of the prior proposals was consistent with the Act and associated guidance. The Exchange is re-filing this proposal promptly following the withdrawal of the Third Proposal with the intention of maintaining the existing fees for connectivity services while at the same time providing additional details not contained in prior proposals. The Exchange believes that this approach is appropriate and fair for competitive reasons as several other exchanges currently charge for similar services, as described below, and because others have followed a similar approach when adopting fees.[6]

As set forth in the Initial Proposal, the Second Proposal, the Third Proposal and this filing, the Exchange does incur significant costs related to the provision of connectivity services and believes it should be permitted to continue charging for such services while also providing additional time for public comment on the level of detail contained in this proposal and other questions posed in the OIP. Finally, the Exchange does not believe that the ability to charge fees for connectivity services or the level of the Exchange's proposed fees are at issue, but rather, that the level of detail required to be included by the Exchange when adopting such fees is at issue. For these reasons, the Exchange believes it is appropriate to re-file this proposal and to continue charging for connectivity services.

In general, the Exchange believes that exchanges, in setting fees of all types, should meet

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6 See, e.g., Securities Exchange Act Release No. 87875 (December 31, 2019), 85 FR 770 (January 7, 2020) (SR-MIAX-2019-51) (notice of filing and immediate effectiveness of changes to the Miami International Securities Exchange LLC, or "MIAX", fee schedule). The Exchange notes that the MIAX filing was the eighth filing by MIAX to adopt the fees proposed for certain connectivity services following multiple times of withdrawing and re-filing the proposal. The Exchange notes that MIAX charged the applicable fees throughout this period while working to develop a filing that met the new standards being applied to fee filings. See also Fee Guidance, infra note 13.

very high standards of transparency to demonstrate why each new fee or fee increase meets the Exchange Act requirements that fees be reasonable, equitably allocated, not unfairly discriminatory, and not create an undue burden on competition among members and markets. In particular, the Exchange believes that each exchange should take extra care to be able to demonstrate that these fees are based on its costs and reasonable business needs.

In proposing to charge fees for connectivity services, the Exchange has sought to be especially diligent in assessing those fees in a transparent way against its own aggregate costs of providing the related service, and also carefully and transparently assessing the impact on Members – both generally and in relation to other Members, i.e., to assure the fee will not create a financial burden on any participant and will not have an undue impact in particular on smaller Members and competition among Members in general. The Exchange believes that this level of diligence and transparency is called for by the requirements of Section 19(b)(1) under the Act,[7] and Rule 19b-4 thereunder,[8] with respect to the types of information self-regulatory organizations ("SROs") should provide when filing fee changes, and Section 6(b) of the Act,[9] which requires, among other things, that exchange fees be reasonable and equitably allocated,[10] not designed to permit unfair discrimination,[11] and that they not impose a burden on competition not necessary or appropriate in furtherance of the purposes of the Act.[12] This rule change proposal addresses those requirements, and the analysis and data in each of the sections that follow are designed to clearly and comprehensively show how they are met.[13]

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7 15 U.S.C. 78s(b)(1).

8 17 CFR 240.19b-4.

9 15 U.S.C. 78f(b).

10 15 U.S.C. 78f(b)(4).

11 15 U.S.C. 78f(b)(5).

12 15 U.S.C. 78f(b)(8).

13 In 2019, Commission staff published guidance suggesting the types of information that SROs may use to demonstrate that their fee filings comply with the standards of the Exchange Act ("Fee Guidance"). While MEMX understands that the Fee Guidance does

Prior to January 3, 2022, MEMX did not charge fees for connectivity to the Exchange, including fees for physical connections or application sessions for order entry purposes or receipt of drop copies. The objective of this approach was to eliminate any fee-based barriers to connectivity for Members when MEMX launched as a national securities exchange in 2020, and it was successful in achieving this objective in that a significant number of Members are directly or indirectly connected to the Exchange.

As detailed below, MEMX recently calculated its aggregate monthly costs for providing physical connectivity to the Exchange at $795,789 and its aggregate monthly costs for providing application sessions at $347,936. Because MEMX offered all connectivity free of charge until January of this year, MEMX has borne 100% of all connectivity costs. In order to cover the aggregate costs of providing connectivity to its Users (both Members and non-Members[14]) going forward and to make a modest profit, as described below, the Exchange is proposing to modify its Fee Schedule, pursuant to MEMX Rules 15.1(a) and (c), to charge a fee of $6,000 per month for each physical connection in the data center where the Exchange primarily operates under normal market conditions ("Primary Data Center") and a fee of $3,000 per month for each physical connection in the Exchange's geographically diverse data center, which is operated for backup and disaster recovery purposes ("Secondary Data Center"), each as further described below. The Exchange also proposes to modify its Fee Schedule, pursuant to MEMX Rules 15.1(a) and (c), to charge a fee of $450 per month for each application session used for order entry ("Order Entry Port") and application session for receipt of drop copies ("Drop Copy Port")

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not create new legal obligations on SROs, the Fee Guidance is consistent with MEMX's view about the type and level of transparency that exchanges should meet to demonstrate compliance with their existing obligations when they seek to charge new fees. See Staff Guidance on SRO Rule Filings Relating to Fees (May 21, 2019) available at https://www.sec.gov/tm/staff-guidancesro-rule-filings-fees.

[14] Types of market participants that obtain connectivity services from the Exchange but are not Members include service bureaus and extranets. Service bureaus offer technology-based services to other companies for a fee, including order entry services to Members, and thus, may access application sessions on behalf of one or more Members. Extranets offer physical connectivity services to Members and non-Members.

in the Exchange's Primary Data Center, as further described below.[15]

Cost Analysis

Background on Cost Analysis

In October 2021, MEMX completed a study of its aggregate costs to produce market data and connectivity (the "Cost Analysis"). The Cost Analysis required a detailed analysis of MEMX's aggregate baseline costs, including a determination and allocation of costs for core services provided by the Exchange – transaction execution, market data, membership services, physical connectivity, and application sessions (which provide order entry, cancellation and modification functionality, risk functionality, ability to receive drop copies, and other functionality). MEMX separately divided its costs between those costs necessary to deliver each of these core services, including infrastructure, software, human resources (i.e., personnel), and certain general and administrative expenses ("cost drivers"). Next, MEMX adopted an allocation methodology with various principles to guide how much of a particular cost should be allocated to each core service. For instance, fixed costs that are not driven by client activity (e.g., message rates), such as data center costs, were allocated more heavily to the provision of physical connectivity (75%), with smaller allocations to logical ports (2.6%), and the remainder to the provision of transaction execution and market data services (22.4%). In contrast, costs that are driven largely by client activity (e.g., message rates), were not allocated to physical connectivity at all but were allocated primarily to the provision of transaction execution and market data services (90%) with a smaller allocation to application sessions (10%). The allocation methodology was decided through conversations with senior management familiar with each area of the Exchange's operations. After adopting this allocation methodology, the Exchange

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[15] As proposed, fees for connectivity services would be assessed based on each active connectivity service product at the close of business on the first day of each month. If a product is cancelled by a Member's submission of a written request or via the MEMX User Portal prior to such fee being assessed then the Member will not be obligated to pay the applicable product fee. MEMX will not return pro-rated fees even if a product is not used for an entire month.

then applied an estimated allocation of each cost driver to each core service, resulting in the cost allocations described below.

By allocating segmented costs to each core service, MEMX was able to estimate by core service the potential margin it might earn based on different fee models. The Exchange notes that as a non-listing venue it has four primary sources of revenue that it can potentially use to fund its operations: transaction fees, fees for connectivity services, membership and regulatory fees, and market data fees. Accordingly, the Exchange must cover its expenses from these four primary sources of revenue. The Exchange also notes that as a general matter each of these sources of revenue is based on services that are interdependent. For instance, the Exchange's system for executing transactions is dependent on physical hardware and connectivity, only Members and parties that they sponsor to participate directly on the Exchange may submit orders to the Exchange, many Members (but not all) consume market data from the Exchange in order to trade on the Exchange, and the Exchange consumes market data from external sources in order to comply with regulatory obligations. Accordingly, given this interdependence, the allocation of costs to each service or revenue source required judgment of the Exchange and was weighted based on estimates of the Exchange that the Exchange believes are reasonable, as set forth below.

Through the Exchange's extensive Cost Analysis, the Exchange analyzed every expense item in the Exchange's general expense ledger to determine whether each such expense relates to the provision of connectivity services, and, if such expense did so relate, what portion (or percentage) of such expense actually supports the provision of connectivity services, and thus bears a relationship that is, "in nature and closeness," directly related to network connectivity services. In turn, the Exchange allocated certain costs more to physical connectivity and others to applications, while certain costs were only allocated to such services at a very low percentage or not at all, using consistent allocation methodologies as described above. Based on this analysis, MEMX estimates that the cost drivers to provide connectivity services, including both

physical connections and application sessions, result in an aggregate monthly cost of $1,143,715, as further detailed below.

Costs Related to Offering Physical Connectivity

The following chart details the individual line-item costs considered by MEMX to be related to offering physical connectivity as well as the percentage of the Exchange's overall costs such costs represent for such area (e.g., as set forth below, the Exchange allocated approximately 13.8% of its overall Human Resources cost to offering physical connectivity).

COSTS DRIVERS	**COSTS**	**% OF ALL**
Human Resources	$262,129	13.8%
Connectivity (external fees, cabling, switches, etc.)	$162,000	75.0%
Data Center	$219,000	75.0%
External Market Data	n/a	n/a
Hardware and Software Licenses	$4,507	1.2%
Monthly Depreciation	$99,328	18.5%
Allocated Shared Expenses	$48,826	10.0%
TOTAL	**$795,789**	**20.1%**

Below are additional details regarding each of the line-item costs considered by MEMX to be related to offering physical connectivity.

Human Resources

For personnel costs (Human Resources), MEMX calculated an allocation of employee time for employees whose functions include providing and maintaining physical connectivity and performance thereof (primarily the MEMX network infrastructure team, which spends most of their time performing functions necessary to provide physical connectivity) and for which the Exchange allocated 75% of each employee's time. The Exchange also allocated Human Resources costs to provide physical connectivity to a limited subset of personnel with ancillary functions related to establishing and maintaining such connectivity (such as information security and finance personnel), for which the Exchange allocated cost on an employee-by-employee basis (i.e., only including those personnel who do support functions related to providing physical connectivity) and then applied a smaller allocation to such employees (less than 20%). The Exchange notes that it has fewer than seventy (70) employees and each department leader has

direct knowledge of the time spent by those spent by each employee with respect to the various tasks necessary to operate the Exchange. The estimates of Human Resources cost were therefore determined by consulting with such department leaders, determining which employees are involved in tasks related to providing physical connectivity, and confirming that the proposed allocations were reasonable based on an understanding of the percentage of their time such employees devote to tasks related to providing physical connectivity. The Exchange notes that senior level executives were only allocated Human Resources costs to the extent the Exchange believed they are involved in overseeing tasks related to providing physical connectivity. The Human Resources cost was calculated using a blended rate of compensation reflecting salary, equity and bonus compensation, benefits, payroll taxes, and 401(k) matching contributions.

Connectivity

The Connectivity cost includes external fees paid to connect to other exchanges and third parties, cabling and switches required to operate the Exchange. The Exchange notes that it previously labeled this line item as "Infrastructure and Connectivity" but has eliminated the reference to Infrastructure because several other line-item costs could be considered infrastructure given the generality of that term. The Connectivity line-item is more narrowly focused on technology used to complete connections to the Exchange and to connect to external markets. The Exchange notes that its connectivity to external markets is required in order to receive market data to run the Exchange's matching engine and basic operations compliant with existing regulations, primarily Regulation NMS.

Data Center

Data Center costs includes an allocation of the costs the Exchange incurs to provide physical connectivity in the third-party data centers where it maintains its equipment (such as dedicated space, security services, cooling and power). The Exchange notes that it does not own the Primary Data Center or the Secondary Data Center, but instead, leases space in data centers operated by third parties. The Exchange has allocated a high percentage of the Data Center cost

(75%) to physical connectivity because the third-party data centers and the Exchange's physical equipment contained therein is the most direct cost in providing physical access to the Exchange. In other words, for the Exchange to operate in a dedicated space with connectivity of participants to a physical trading platform, the data centers are a very tangible cost, and in turn, if the Exchange did not maintain such a presence then physical connectivity would be of no value to market participants.

External Market Data

External Market Data includes fees paid to third parties, including other exchanges, to receive and consume market data from other markets. The Exchange notes that it did not allocate any External Market Data fees to the provision of physical connectivity as market data is not related to such services.

Hardware and Software Licenses

Hardware and Software Licenses includes hardware and software licenses used to operate and monitor physical assets necessary to offer physical connectivity to the Exchange.

Monthly Depreciation

All physical assets and software, which also includes assets used for testing and monitoring of Exchange infrastructure, were valued at cost, depreciated or leased over periods ranging from three to five years. Thus, the depreciation cost primarily relates to servers necessary to operate the Exchange, some of which are owned by the Exchange and some of which are leased by the Exchange in order to allow efficient periodic technology refreshes. As noted above, the Exchange allocated 18.5% of all depreciation costs to providing physical connectivity. The Exchange notes, however, that it did not allocate depreciation costs for any depreciated software necessary to operate the Exchange to physical connectivity, as such software does not impact the provision of physical connectivity.

Allocated Shared Expenses

Finally, a limited portion of general shared expenses was allocated to overall physical

connectivity costs as without these general shared costs the Exchange would not be able to operate in the manner that it does and provide physical connectivity. The costs included in general shared expenses include general expenses of the Exchange, including office space and office expenses (e.g., occupancy and overhead expenses), utilities, recruiting and training, marketing and advertising costs, professional fees for legal, tax and accounting services (including external and internal audit expenses), and telecommunications costs. The Exchange notes that the cost of paying directors to serve on its Board of Directors is also included in the Exchange's general shared expenses, and thus a portion of such overall cost amounting to 10% of the overall cost for directors was allocated to providing physical connectivity. The Exchange notes that the 10% allocation of general shared expenses for physical connectivity is lower than that allocated to general shared expenses for application sessions based on its allocation methodology that weighted costs attributable to each Core Service based on an understanding of each area. While physical connectivity has several areas where certain tangible costs are heavily weighted towards providing such service (e.g., Data Centers, as described above), physical connectivity does not require as many broad or indirect resources as other Core Services. The total monthly cost of $795,789 was divided by the number of physical connections the Exchange maintained at the time that proposed pricing was determined (143), to arrive at a cost of approximately $5,565 per month, per physical connection.

Costs Related to Offering Application Sessions

The following chart details the individual line-item costs considered by MEMX to be related to offering application sessions as well as the percentage of the Exchange's overall costs such costs represent for such area (e.g., as set forth below, the Exchange allocated approximately 7.7% of its overall Human Resources cost to offering application sessions).

COSTS DRIVERS[16]	**COSTS**	**% OF ALL**

[16] The Exchange notes that the total monthly cost set forth for application sessions

Human Resources	$147,029	7.7%
Connectivity (external fees, cabling, switches, etc.)	$5,520	2.6%
Data Center	$7,462	2.6%
External Market Data	$10,734	7.5%
Hardware and Software Licenses	$37,771	10.1%
Monthly Depreciation	$44,843	8.3%
Allocated Shared Expenses	$94,567	19.4%
TOTAL	**$347,926**	**8.8%**

Human Resources

With respect to application sessions, MEMX calculated Human Resources cost by taking an allocation of employee time for employees whose functions include providing application sessions and maintaining performance thereof (including a broader range of employees such as technical operations personnel, market operations personnel, and software engineering personnel) as well as a limited subset of personnel with ancillary functions related to maintaining such connectivity (such as sales, membership, and finance personnel). The estimates of Human Resources cost were again determined by consulting with department leaders, determining which employees are involved in tasks related to providing application sessions and maintaining performance thereof, and confirming that the proposed allocations were reasonable based on an understanding of the percentage of their time such employees devote to tasks related to providing application sessions and maintaining performance thereof. The Exchange notes that senior level executives were only allocated Human Resources costs to the extent the Exchange believed they are involved in overseeing tasks related to providing application sessions and maintaining performance thereof. The Human Resources cost was again calculated using a blended rate of

($347,926) is the same as that used for the Initial Proposal, the Second Proposal, and the Third Proposal, however the Exchange has modified the categorization of such fees in the table above as such categorization was inconsistent in the prior proposals between physical connectivity and application sessions. For instance, the Exchange included applicable depreciation expenses in the Hardware and Software Licenses category with respect to application sessions instead of the Monthly Depreciation category. As another example, the Exchange included applicable Data Center costs in the Connectivity category with respect to application sessions. The revised chart above corrects these inconsistencies.

compensation reflecting salary, equity and bonus compensation, benefits, payroll taxes, and 401(k) matching contributions.

Connectivity

The Connectivity cost includes external fees paid to connect to other exchanges, cabling and switches, as described above.

Data Center

Data Center costs includes an allocation of the costs the Exchange incurs to provide physical connectivity in the third-party data centers where it maintains its equipment as well as related costs (the Exchange does not own the Primary Data Center or the Secondary Data Center, but instead, leases space in data centers operated by third parties).

External Market Data

External Market Data includes fees paid to third parties, including other exchanges, to receive and consume market data from other markets. The Exchange allocated a small portion of External Market Data fees (7.5%) to the provision of application sessions as such market data is necessary to offer certain services related to such sessions, such as validating orders on entry against the national best bid and national best offer and checking for other conditions (e.g., whether a symbol is halted or subject to a short sale circuit breaker). Thus, as market data from other Exchanges is consumed at the application session level in order to validate orders before additional processing occurs with respect to such orders, the Exchange believes it is reasonable to allocate a small amount of such costs to application sessions.

Hardware and Software Licenses

Hardware and Software Licenses includes hardware and software licenses used to monitor the health of the order entry services provided by the Exchange.

Monthly Depreciation

All physical assets and software, which also includes assets used for testing and monitoring of order entry infrastructure, were valued at cost, depreciated or leased over periods

ranging from three to five years. Thus, the depreciation cost primarily relates to servers necessary to operate the Exchange, some of which is owned by the Exchange and some of which is leased by the Exchange in order to allow efficient periodic technology refreshes. The Exchange allocated 8.3% of all depreciation costs to providing application sessions. In contrast to physical connectivity, described above, the Exchange did allocate depreciation costs for depreciated software necessary to operate the Exchange to application sessions because such software is related to the provision of such connectivity.

Allocated Shared Expenses

Finally, a limited portion of general shared expenses was allocated to overall application session costs as without these general shared costs the Exchange would not be able to operate in the manner that it does and provide application sessions. The costs included in general shared expenses include general expenses of the Exchange, including office space and office expenses (e.g., occupancy and overhead expenses), utilities, recruiting and training, marketing and advertising costs, professional fees for legal, tax and accounting services (including external and internal audit expenses), and telecommunications costs. The Exchange again notes that the cost of paying directors to serve on its Board of Directors is included in the calculation of Allocated Shared Expenses, and thus a portion of such overall cost amounting to less than 20% of the overall cost for directors was allocated to providing application sessions. The Exchange notes that the 19.4% allocation of general shared expenses for application sessions is higher than that allocated to general shared expenses for physical connectivity based on its allocation methodology that weighted costs attributable to each Core Service based on an understanding of each area. While physical connectivity has several areas where certain tangible costs are heavily weighted towards providing such service (e.g., Data Centers, as described above), application sessions require a broader level of support from Exchange personnel in different areas, which in turn leads to a broader general level of cost to the Exchange. The total monthly cost of $347,926 was divided by the number of application sessions the Exchange maintained at the time that

proposed pricing was determined (835), to arrive at a cost of approximately $417 per month, per application session.

Cost Analysis – Additional Discussion

In conducting its Cost Analysis, the Exchange did not allocate any of its expenses in full to any core services (including physical connectivity or application sessions) and did not double-count any expenses. Instead, as described above, the Exchange allocated applicable cost drivers across its core services and used the same Cost Analysis to form the basis of this proposal and the filing it recently submitted proposing fees for proprietary data feeds offered by the Exchange. For instance, in calculating the Human Resources expenses to be allocated to physical connections, the Exchange has a team of employees dedicated to network infrastructure and with respect to such employees the Exchange allocated network infrastructure personnel with a high percentage of the cost of such personnel (75%) given their focus on functions necessary to provide physical connections. The salaries of those same personnel were allocated only 2.5% to application sessions and the remaining 22.5% was allocated to transactions and market data. The Exchange did not allocate any other Human Resources expense for providing physical connections to any other employee group outside of a smaller allocation (19%) of the cost associated with certain specified personnel who work closely with and support network infrastructure personnel. In contrast, the Exchange allocated much smaller percentages of costs (11% or less) across a wider range of personnel groups in order to allocate Human Resources costs to providing application sessions. This is because a much wider range of personnel are involved in functions necessary to offer, monitor and maintain application sessions but the tasks necessary to do so are not a primary or full-time function.

In total, the Exchange allocated 13.8% of its personnel costs to providing physical connections and 7.7% of its personnel costs to providing application sessions, for a total allocation of 21.5% Human Resources expense to provide connectivity services. In turn, the Exchange allocated the remaining 78.5% of its Human Resources expense to membership (less

than 1%) and transactions and market data (77.5%). Thus, again, the Exchange's allocations of cost across core services were based on real costs of operating the Exchange and were not double-counted across the core services or their associated revenue streams.

As another example, the Exchange allocated depreciation expense to all core services, including physical connections and application sessions, but in different amounts. The Exchange believes it is reasonable to allocate the identified portion of such expense because such expense includes the actual cost of the computer equipment, such as dedicated servers, computers, laptops, monitors, information security appliances and storage, and network switching infrastructure equipment, including switches and taps that were purchased to operate and support the network. Without this equipment, the Exchange would not be able to operate the network and provide connectivity services to its Members and non-Members and their customers. However, the Exchange did not allocate all of the depreciation and amortization expense toward the cost of providing connectivity services, but instead allocated approximately 27% of the Exchange's overall depreciation and amortization expense to connectivity services (18.5% attributed to physical connections and 8.3% to application sessions). The Exchange allocated the remaining depreciation and amortization expense (approximately 73%) toward the cost of providing transaction services and market data.

Looking at the Exchange's operations holistically, the total monthly costs to the Exchange for offering core services is $3,954,537. Based on the initial four months of billing for connectivity services, the Exchange expects to collect its original estimate of $1,233,750 on a monthly basis for such services.[17] Incorporating this amount into the Exchange's overall

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[17] The Exchange notes that it has charged connectivity services for four months and so far the average amount expected is very close to the estimated revenue provided in the Initial Proposal. Specifically, the Exchange has earned an estimated $1,246,700 ($12,950 more than projected) for connectivity services on an average basis over January through April. The Exchange believes this difference is immaterial for purposes of this proposal and thus, will continue to use the original estimated revenue of $1,233,750 for purposes of this proposal.

projected revenue, including projections related to recently adopted market data fees, the Exchange anticipates monthly revenue ranging from $4,296,950 to $4,546,950 from all sources (i.e., connectivity fees and membership fees that were introduced in January 2022, transaction fees, and revenue from market data, both through the fees adopted in April 2022 and through the revenue received from the SIPs). As such, applying the Exchange's holistic Cost Analysis to a holistic view of anticipated revenues, the Exchange would earn approximately 8.5% to 15% margin on its operations as a whole. The Exchange believes that this amount is reasonable.

The Exchange notes that its revenue estimates are based on projections across all potential revenue streams and will only be realized to the extent such revenue streams actually produce the revenue estimated. As a new entrant to the hyper-competitive exchange environment, and an exchange focused on driving competition, the Exchange does not yet know whether such expectations will be realized. For instance, in order to generate the revenue expected from connectivity, the Exchange will have to be successful in retaining existing clients that wish to maintain physical connectivity and/or application sessions or in obtaining new clients that will purchase such services. Similarly, the Exchange will have to be successful in retaining a positive net capture on transaction fees in order to realize the anticipated revenue from transaction pricing.

To the extent the Exchange is successful in gaining market share, improving its net capture on transaction fees, encouraging new clients to connect directly to the Exchange, and other developments that would help to increase Exchange revenues, the Exchange does not believe it should be penalized for such success. The Exchange, like other exchanges, is, after all, a for-profit business. Accordingly, while the Exchange believes in transparency around costs and potential margins as well as periodic review of costs and applicable costs (as discussed below), the Exchange does not believe that these estimates should form the sole basis of whether or not a proposed fee is reasonable or can be adopted. Instead, the Exchange believes that the information should be used solely to confirm that an Exchange is not earning supra-competitive

profits, and the Exchange believes its Cost Analysis and related projections demonstrate this fact.

The Exchange notes that the Cost Analysis was based on the Exchange's first year of operations and projections for the next year (which is currently underway). As such, the Exchange believes that its costs will remain relatively similar in future years. It is possible however that such costs will either decrease or increase. To the extent the Exchange sees growth in use of connectivity services it will receive additional revenue to offset future cost increases. However, if use of connectivity services is static or decreases, the Exchange might not realize the revenue that it anticipates or needs in order to cover applicable costs. Accordingly, the Exchange is committing to conduct a one-year review after implementation of these fees. The Exchange expects that it may propose to adjust fees at that time, to increase fees in the event that revenues fail to cover costs and a reasonable mark-up of such costs. Similarly, the Exchange would propose to decrease fees in the event that revenue materially exceeds our current projections. In addition, the Exchange will periodically conduct a review to inform its decision making on whether a fee change is appropriate (e.g., to monitor for costs increasing/decreasing or subscribers increasing/decreasing, etc. in ways that suggest the then-current fees are becoming dislocated from the prior cost-based analysis) and would propose to increase fees in the event that revenues fail to cover its costs and a reasonable mark-up, or decrease fees in the event that revenue or the mark-up materially exceeds our current projections. In the event that the Exchange determines to propose a fee change, the results of a timely review, including an updated cost estimate, will be included in the rule filing proposing the fee change. More generally, we believe that it is appropriate for an exchange to refresh and update information about its relevant costs and revenues in seeking any future changes to fees, and the Exchange commits to do so.

Proposed Fees

Physical Connectivity Fees

MEMX offers its Members the ability to connect to the Exchange in order to transmit

orders to and receive information from the Exchange. Members can also choose to connect to MEMX indirectly through physical connectivity maintained by a third-party extranet. Extranet physical connections may provide access to one or multiple Members on a single connection. Users of MEMX physical connectivity services (both Members and non-Members[18]) seeking to establish one or more connections with the Exchange submit a request to the Exchange via the MEMX User Portal or directly to Exchange personnel. Upon receipt of the completed instructions, MEMX establishes the physical connections requested by the User. The number of physical connections assigned to each User as of April 29, 2022, ranges from one to ten, depending on the scope and scale of the Member's trading activity on the Exchange as determined by the Member, including the Member's determination of the need for redundant connectivity. The Exchange notes that 44% of its Members do not maintain a physical connection directly with the Exchange in the Primary Data Center (though many such Members have connectivity through a third-party provider) and another 44% have either one or two physical ports to connect to the Exchange in the Primary Data Center. Thus, only a limited number of Members, 12%, maintain three or more physical ports to connect to the Exchange in the Primary Data Center.

As described above, in order to cover the aggregate costs of providing physical connectivity to Users and make a modest profit, as described below, the Exchange is proposing to charge a fee of $6,000 per month for each physical connection in the Primary Data Center and a fee of $3,000 per month for each physical connection in the Secondary Data Center. There is no requirement that any Member maintain a specific number of physical connections and a Member may choose to maintain as many or as few of such connections as each Member deems appropriate. The Exchange notes, however, that pursuant to Rule 2.4 (Mandatory Participation in Testing of Backup Systems), the Exchange does require a small number of Members to

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[18] See supra note 14.

connect and participate in functional and performance testing as announced by the Exchange, which occurs at least once every 12 months. Specifically, Members that have been determined by the Exchange to contribute a meaningful percentage of the Exchange's overall volume must participate in mandatory testing of the Exchange's backup systems (i.e., such Members must connect to the Secondary Data Center). The Exchange notes that Members that have been designated are still able to use third-party providers of connectivity to access the Exchange at its Secondary Data Center, and that one such designated Member does use a third-party provider instead of connecting directly to the Secondary Data Center through connectivity provided by the Exchange.[19] Nonetheless, because some Members are required to connect to the Secondary Data Center pursuant to Rule 2.4 and to encourage Exchange Members to connect to the Secondary Data Center generally, the Exchange has proposed to charge one-half of the fee for a physical connection in the Primary Data Center. The Exchange notes that its costs related to operating the Secondary Data Center were not separately calculated for purposes of this proposal, but instead, all costs related to providing physical connections were considered in aggregate. The Exchange believes this is appropriate because had the Exchange calculated such costs separately and then determined the fee per physical connection that would be necessary for the Exchange to cover its costs for operating the Secondary Data Center, the costs would likely be much higher than those proposed for connectivity at the Primary Data Center because Members maintain significantly fewer connections at the Secondary Data Center. The Exchange believes that charging a higher fee for physical connections at the Secondary Data Center would be inconsistent with its objective of encouraging Members to connect at such data center and is inconsistent with the fees charged by other exchanges, which also provide connectivity for disaster recovery purposes

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[19] The Exchange also notes that a second designated Member that is required to participate in mandatory testing with the Exchange for the first time this year has not yet connected to the Exchange in the Secondary Data Center and has indicated that it is likely to use a third-party provider.

at a discounted rate.[20]

The proposed fee will not apply differently based upon the size or type of the market participant, but rather based upon the number of physical connections a User requests, based upon factors deemed relevant by each User (either a Member, service bureau or extranet). The Exchange believes these factors include the costs to maintain connectivity, business model and choices Members make in how to participate on the Exchange, as further described below.

The proposed fee of $6,000 per month for physical connections at the Primary Data Center is designed to permit the Exchange to cover the costs allocated to providing connectivity services with a modest markup (approximately 8%), which would also help fund future expenditures (increased costs, improvements, etc.). The Exchange believes it is appropriate to charge fees that represent a reasonable markup over cost given the other factors discussed above and the need for the Exchange to maintain a highly performant and stable platform to allow Members to transact with determinism. The Exchange also reiterates that the Exchange did not charge any fees for connectivity services prior to January 2022, and its allocation of costs to physical connections was part of a holistic allocation that also allocated costs to other core services without double-counting any expenses. As such, the proposal only truly constitutes a "markup" to the extent the Exchange recovers the initial costs of building the network and infrastructure necessary to offer physical connectivity and operating the Exchange for over a year without connectivity fees.

As noted above, the Exchange proposes a discounted rate of $3,000 per month for physical connections at its Secondary Data Center. The Exchange has proposed this discounted rate for Secondary Data Center connectivity in order to encourage Members to establish and maintain such connections. Also, as noted above, a small number of Members are required pursuant to Rule 2.4 to connect and participate in testing of the Exchange's backup systems, and

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[20] See, e.g., the BZX equities fee schedule, available at: https://markets.cboe.com/us/equities/membership/fee_schedule/bzx/.

the Exchange believes it is appropriate to provide a discounted rate for physical connections at the Secondary Data Center given this requirement. The Exchange notes that this rate is well below the cost of providing such services and the Exchange will operate its network and systems at the Secondary Data Center without recouping the full amount of such cost through connectivity services.

The proposed fee for physical connections is effective on filing and will become operative immediately.

Application Session Fees

Similar to other exchanges, MEMX offers its Members application sessions, also known as logical ports, for order entry and receipt of trade execution reports and order messages. Members can also choose to connect to MEMX indirectly through a session maintained by a third-party service bureau. Service bureau sessions may provide access to one or multiple Members on a single session. Users of MEMX connectivity services (both Members and non-Members[21]) seeking to establish one or more application sessions with the Exchange submit a request to the Exchange via the MEMX User Portal or directly to Exchange personnel. Upon receipt of the completed instructions, MEMX assigns the User the number of sessions requested by the User. The number of sessions assigned to each User as of April 29, 2022, ranges from one to more than 100, depending on the scope and scale of the Member's trading activity on the Exchange (either through a direct connection or through a service bureau) as determined by the Member. For example, by using multiple sessions, Members can segregate order flow from different internal desks, business lines, or customers. The Exchange does not impose any minimum or maximum requirements for how many application sessions a Member or service bureau can maintain, and it is not proposing to impose any minimum or maximum session requirements for its Members or their service bureaus.

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[21] See supra note 14.

As described above, in order to cover the aggregate costs of providing application sessions to Users and to make a modest profit, as described below, the Exchange is proposing to charge a fee of $450 per month for each Order Entry Port and Drop Copy Port in the Primary Data Center. The Exchange notes that it does not propose to charge for: (1) Order Entry Ports or Drop Copy Ports in the Secondary Data Center, or (2) any Test Facility Ports or MEMOIR Gap Fill Ports. The Exchange has proposed to provide Order Entry Ports and Drop Copy Ports in the Secondary Data Center free of charge in order to encourage Members to connect to the Exchange's backup trading systems. Similarly, because the Exchange wishes to encourage Members to conduct appropriate testing of their use of the Exchange, the Exchange has not proposed to charge for Test Facility Ports. With respect to MEMOIR Gap Fill ports, such ports are exclusively used in order to receive information when a market data recipient has temporarily lost its view of MEMX market data. The Exchange has not proposed charging for such ports because the costs of providing and maintaining such ports is more directly related to producing market data.

The proposed fee of $450 per month for each Order Entry Port and Drop Copy Port in the Primary Data Center is designed to permit the Exchange to cover the costs allocated to providing application sessions with a modest markup (approximately 8%), which would also help fund future expenditures (increased costs, improvements, etc.). The Exchange also reiterates that the Exchange did not charge any fees for connectivity services prior to January 2022, and its allocation of costs to application sessions was part of a holistic allocation that also allocated costs to other core services without double-counting any expenses. As such, the proposal only truly constitutes a "markup" to the extent the Exchange recovers the initial costs of building the network and infrastructure necessary to offer application sessions and operating the Exchange for over a year without connectivity fees.

The proposed fee is also designed to encourage Users to be efficient with their application session usage, thereby resulting in a corresponding increase in the efficiency that the

Exchange would be able to realize in managing its aggregate costs for providing connectivity services. There is no requirement that any Member maintain a specific number of application sessions and a Member may choose to maintain as many or as few of such ports as each Member deems appropriate. The Exchange has designed its platform such that Order Entry Ports can handle a significant amount of message traffic (i.e., over 50,000 orders per second), and has no application flow control or order throttling. In contrast, other exchanges maintain certain thresholds that limit the amount of message traffic that a single logical port can handle.[22] As such, while several Members maintain a relatively high number of ports because that is consistent with their usage on other exchanges and is preferable for their own reasons, the Exchange believes that it has designed a system capable of allowing such Members to significantly reduce the number of application sessions maintained.

The proposed fee will not apply differently based upon the size or type of the market participant, but rather based upon the number of application sessions a User requests, based upon factors deemed relevant by each User (either a Member or service bureau on behalf of a Member). The Exchange believes these factors include the costs to maintain connectivity and choices Members make in how to segment or allocate their order flow.[23]

The proposed fee for application sessions is effective on filing and will become operative immediately.

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22 See, e.g., Cboe US Equities BOE Specification, *available at*: https://cdn.cboe.com/resources/membership/Cboe_US_Equities_BOE_Specification.pdf (describing a 5,000 message per second Port Order Rate Threshold on Cboe BOE ports).

23 The Exchange understands that some Members (or service bureaus) may also request more Order Entry Ports to enable the ability to send a greater number of simultaneous order messages to the Exchange by spreading orders over more Order Entry Ports, thereby increasing throughput (i.e., the potential for more orders to be processed in the same amount of time). The degree to which this usage of Order Entry Ports provides any throughput advantage is based on how a particular Member sends order messages to MEMX, however the Exchange notes that its architecture reduces the impact or necessity of such a strategy. All Order Entry Ports on MEMX provide the same throughput, and as noted above, the throughput is likely adequate even for a Member sending a significant amount of volume at a fast pace, and is not artificially throttled or limited in any way by the Exchange.

Proposed Fees - Additional Discussion

As discussed above, the proposed fees for connectivity services do not by design apply differently to different types or sizes of Members. As discussed in more detail in the Statutory Basis section, the Exchange believes that the likelihood of higher fees for certain Members subscribing to connectivity services usage than others is not unfairly discriminatory because it is based on objective differences in usage of connectivity services among different Members. The Exchange's incremental aggregate costs for all connectivity services are disproportionately related to Members with higher message traffic and/or Members with more complicated connections established with the Exchange, as such Members: (1) consume the most bandwidth and resources of the network; (2) transact the vast majority of the volume on the Exchange; and (3) require the high-touch network support services provided by the Exchange and its staff, including network monitoring, reporting and support services, resulting in a much higher cost to the Exchange to provide such connectivity services. For these reasons, MEMX believes it is not unfairly discriminatory for the Members with higher message traffic and/or Members with more complicated connections to pay a higher share of the total connectivity services fees. While Members with a business model that results in higher relative inbound message activity or more complicated connections are projected to pay higher fees, the level of such fees is based solely on the number of physical connections and/or application sessions deemed necessary by the Member and not on the Member's business model or type of Member. The Exchange notes that the correlation between message traffic and usage of connectivity services is not completely aligned because Members individually determine how many physical connections and application sessions to request, and Members may make different decisions on the appropriate ways based on facts unique to their individual businesses. Based on the Exchange's architecture, as described above, the Exchange believes that a Member even with high message traffic would be able to conduct business on the Exchange with a relatively small connectivity services footprint.

Because the Exchange has already adopted fees for connectivity services, the Exchange has initial results of the impact such fees have had on Member and non-Member usage of connectivity services. Since the fees went into effect as set forth in the Initial Proposal, nine (9) customers with physical connectivity to the Exchange have canceled one or more of their physical connections. These cancellations resulted in an approximate 6% drop in the physical connectivity offered by the Exchange prior to the Exchange charging for such connectivity.[24] In each instance, the customer told the Exchange that its reason for cancelling its connectivity was the imposition of fees. Of these customers, two (2) customers canceled services entirely, three (3) maintained at least one physical connection provided directly by the Exchange, and the remaining four (4) customers migrated to alternative sources of connectivity through a third-party provider. As such, some market participants (one market data provider and one extranet) determined that they no longer wanted to connect to the Exchange directly or through a third party as it was not necessary for their business and their initial connection was only worthwhile so long as services were provided free of charge. Other market participants (one market data provider, one extranet and one Member) determined that they still wished to be directly connected to the Exchange but did not need as many connections. Finally, some market participants (one market data provider, one service bureau and two trading participants) determined that there was a more affordable alternative through a third-party provider of connectivity services. As a general matter, the customers that discontinued use of physical connectivity or transitioned to a third-party provider of connectivity services were either connected purely to consume market data for their own purposes or distribution to others, were themselves extranets or service bureaus providing alternatives to the Exchange's connectivity services, or were smaller trading firms that elected not to participate on the Exchange directly

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[24] The Exchange notes that despite these cancellations, the Exchange has since had existing customers and new customers order physical connectivity that has resulted in the Exchange maintaining nearly the same amount of physical connections for customers as it did prior to the imposition of fees.

and likely connected initially due to the fact that there were no fees to connect.

Additionally, since the Exchange began charging for application sessions, five (5) customers have canceled a total of thirty (30) application sessions (approximately 3.5% of all customer application sessions) due to the fees adopted by the Exchange.[25] As a general matter, these customers determined that the number of application sessions that they maintained was not necessary in order to participate on the Exchange.

Based on its experience since adopting the proposed fees in January, the Exchange believes that there is ample evidence showing that it is subject to competitive forces when setting fees for physical connectivity and application sessions. Indeed, the evidence shows that firms can choose not to purchase those services, reduce consumption, or rely on external third-party providers in response to proposed fees. These competitive forces ensure that the Exchange cannot charge supra-competitive fees for connectivity services. In fact, as a new entrant to the exchange industry, the Exchange is particularly subject to competitive forces and has carefully crafted its current and proposed fees with the goal of growing its business. In this environment, the Exchange has no ability to set fees at levels that would be deemed supra-competitive as doing so would limit the Exchange's ability to compete with its larger, established competitors.

Finally, the fees for connectivity services will help to encourage connectivity services usage in a way that aligns with the Exchange's regulatory obligations. As a national securities exchange, the Exchange is subject to Regulation Systems Compliance and Integrity ("Reg SCI").[26] Reg SCI Rule 1001(a) requires that the Exchange establish, maintain, and enforce written policies and procedures reasonably designed to ensure (among other things) that its Reg SCI systems have levels of capacity adequate to maintain the Exchange's operational capability

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[25] The Exchange notes that, as was the case with respect to physical connectivity, the Exchange has since had existing customers and new customers order additional application sessions that has resulted in the Exchange maintaining nearly the same amount of application sessions for customers as it did prior to the imposition of fees.

[26] 17 CFR 242.1000-1007.

and promote the maintenance of fair and orderly markets.[27] By encouraging Users to be efficient with their usage of connectivity services, the proposed fee will support the Exchange's Reg SCI obligations in this regard by ensuring that unused application sessions are available to be allocated based on individual User needs and as the Exchange's overall order and trade volumes increase. As noted above, based on early results, the adoption of fees has led to certain firms reducing the number of application sessions maintained now that such sessions are no longer provided free of charge. Additionally, because the Exchange will charge a lower rate for a physical connection to the Secondary Data Center and will not charge any fees for application sessions at the Secondary Data Center or its Test Facility, the proposed fee structure will further support the Exchange's Reg SCI compliance by reducing the potential impact of a disruption should the Exchange be required to switch to its Disaster Recovery Facility and encouraging Members to engage in any necessary system testing with low or no cost imposed by the Exchange.[28].

2. Statutory Basis

The Exchange believes that the proposed rule change is consistent with the provisions of Section 6(b)[29] of the Act in general, and furthers the objectives of Section 6(b)(4)[30] of the Act, in particular, in that it is designed to provide for the equitable allocation of reasonable dues, fees and other charges among its Members and other persons using its facilities. Additionally, the

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27 17 CFR 242.1001(a).

28 While some Members might directly connect to the Secondary Data Center and incur the proposed $3,000 per month fee, there are other ways to connect to the Exchange, such as through a service bureau or extranet, and because the Exchange is not imposing fees for application sessions in the Secondary Data Center, a Member connecting through another method would not incur any fees charged directly by the Exchange. However, the Exchange notes that a third-party service provider providing connectivity to the Exchange likely would charge a fee for providing such connectivity; such fees are not set by or shared in by the Exchange.

29 15 U.S.C. 78f.

30 15 U.S.C. 78f(b)(4).

Exchange believes that the proposed fees are consistent with the objectives of Section 6(b)(5)[31] of the Act in that they are designed 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 a free and open market and national market system, and, in general, to protect investors and the public interest, and, particularly, are not designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

The Commission has repeatedly expressed its preference for competition over regulatory intervention in determining prices, products, and services in the securities markets. 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."[32] One of the primary objectives of MEMX is to provide competition and to reduce fixed costs imposed upon the industry. Consistent with this objective, the Exchange believes that this proposal reflects a simple, competitive, reasonable, and equitable pricing structure designed to permit the Exchange to cover certain fixed costs that it incurs for providing connectivity services, which are discounted when compared to products and services offered by competitors.[33]

Commission staff noted in its Fee Guidance that, as an initial step in assessing the reasonableness of a fee, staff considers whether the fee is constrained by significant competitive forces. To determine whether a proposed fee is constrained by significant competitive forces, staff has said that it considers whether the evidence demonstrates that there are reasonable

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31 15 U.S.C. 78f(b)(5).

32 See Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496 (June 29, 2005).

33 See infra notes 39-44 and accompanying text.

substitutes for the product or service that is the subject of a proposed fee. There is no regulatory requirement that any market participant connect to the Exchange, that any participant connect in a particular manner, or that any participant maintain a certain number of connections to the Exchange. The Exchange reiterates that a small number of Members are required to connect to the Exchange for participation in mandatory testing of backup systems but such connectivity does not have to be obtained directly from the Exchange but instead can be through a third-party provider that provides connectivity to the Exchange. The Exchange again notes that at least one designated Member does, in fact, connect to the Exchange at the Secondary Data Center through a third-party provider.

The Exchange also acknowledges that certain market participants operate businesses that do, in fact, require them to be connected to all U.S. equity exchanges. For instance, certain Members operate as routing brokers for other market participants. As an equities exchange with approximately 4% volume, these routing brokers likely need to maintain a connection to the Exchange on behalf of their clients. However, it is connectivity services provided by the Exchange that allow such participants to offer their clients a service for which they can be compensated (and allowing their clients not to directly connect but still to access the Exchange), and, as such, the Exchange believes it is reasonable, equitably allocated and not unfairly discriminatory to charge such Members for connectivity services.

As a new entrant to the equities market, the Exchange does not have as Members many market participants that actively trade equities on other exchanges nor are such market participants directly connected to the Exchange. There are also a number of the Exchange's Members that do not connect directly to MEMX. For instance, of the number of Members that maintain application sessions to participate directly on the Exchange, many such Members do not maintain physical connectivity but instead access the Exchange through a service bureau or extranet. In addition, of the Members that are directly connected to MEMX, it is generally the individual needs of the Member that dictate whether they need one or multiple physical

connections to the Exchange as well as the number of application sessions that they will maintain. It is all driven by the business needs of the Member, and as described above, the Exchange believes it offers technology that will enable Members to maintain a smaller connectivity services footprint than they do on other markets.

The Exchange's experience as a new entrant to the market over the past year shows that all broker-dealers are not required to connect to all exchanges, including the Exchange. Instead, many market participants awaited the Exchange growing to a certain percentage of market share before they would join as a Member or connect to the Exchange. In addition, many market participants still have not connected despite the Exchange's growth in one year to more than 4% of the overall equities market share. Thus, the Exchange recognizes that the decision of whether to connect to the Exchange is separate and distinct from the decision of whether and how to trade on the Exchange. This is because there are multiple alternatives to directly participating on the Exchange (such as use of a third-party routing broker to access the Exchange) or directly connecting to the Exchange (such as use of an extranet or service bureau). The Exchange acknowledges that many firms may choose to connect to the Exchange, but ultimately not trade on it, based on their particular business needs. The decision of which type of connectivity to purchase, or whether to purchase connectivity at all, is based on the business needs of each individual firm.

There is also competition for connectivity to the Exchange. For instance, the Exchange competes with certain non-Members who provide connectivity and access to the Exchange, namely extranets and service bureaus. These are resellers of MEMX connectivity – they are not arrangements between broker-dealers to share connectivity costs. Those non-Members resell that connectivity to multiple market participants over the same connection. When physical connectivity is re-sold by a third-party, the Exchange will not receive any connectivity revenue from that sale, and without connectivity fees for the past year, such third parties have been able to re-sell something they receive for free. Such arrangements are entirely between the third-

party and the purchaser, thus constraining the ability of MEMX to set its connectivity pricing as indirect connectivity is a substitute for direct connectivity.

The Exchange has not proposed to charge third party connectivity providers a different rate for connectivity than other market participants and, thus, such third-party providers can provide connectivity at a reduced rate to that provided directly by the Exchange while covering their costs of connecting to the Exchange and many are likely able to generate a profit that makes it worthwhile for them to offer such services. The Exchange acknowledges that if it were to charge higher connectivity fees to third-party connectivity providers than other market participants that the ability for such third-party connectivity providers to offer market participants a reduced fee based on economies of scale would be compromised. The Exchange also acknowledges that some third-party connectivity providers that provide connectivity to exchanges generally may need to maintain connectivity to the Exchange in order to maintain existing client relationships, though again, the Exchange does not set or share in the fees charged by such third-party providers and believes that such providers are able to price connectivity services with their clients appropriately to cover their costs and/or generate a profit.

Indirect connectivity is a viable alternative that is already being used by Members and non-Members of MEMX, constraining the price that the Exchange is able to charge for connectivity to its Exchange. As set forth above, nearly half of the Exchange's Members do not have a physical connection provided by the Exchange and instead must use a third-party provider. Members who have not established any connectivity to the Exchange are still able to trade on the Exchange indirectly through other Members or non-Member extranets or service bureaus that are connected. These Members will not be forced or compelled to purchase physical connectivity services, and they retain all of the other benefits of membership with the Exchange. Accordingly, Members have the choice to purchase physical connectivity and are not compelled to do so. The Exchange notes that without an application session, specifically an Order Entry Port, a Member could not submit orders to the Exchange. As such, while application sessions

too can be obtained from a third-party reseller (i.e., a service bureau) the Exchange will receive revenue either from the Member or the third-party service bureau for each application session. However, as noted elsewhere, the Exchange has designed its platform such that Order Entry Ports can handle a significant amount of message traffic (i.e., over 50,000 orders per second), and has no application flow control or order throttling. As such, the Exchange believes that it has designed a system capable of allowing such Members to significantly reduce the number of application sessions maintained.

As described above, the Exchange has seen certain Members and non-Members discontinue or change their usage of connectivity services provided by the Exchange in response to the fees adopted by the Exchange. Specifically, nine (9) participants reduced or discontinued use of connectivity services provided directly by the Exchange and five (5) participants reduced the number of application sessions used to participate on the Exchange. The Exchange believes that this demonstrates that not all market participants are required to use connectivity services provided by the Exchange but can instead choose to participate on the Exchange through a third-party provider of connectivity services, indirectly through another Member of the Exchange, or not at all. The Exchange also notes that of the participants that reduced or discontinued their use of connectivity services, several were in fact third-party providers of connectivity services, which demonstrates that such providers will connect to the Exchange to the extent they have sufficient clients to whom they can provide connectivity services and make a profit but they will not connect if this is not the case.

The Exchange believes that the proposed fees for connectivity services are reasonable, equitable and not unfairly discriminatory because, as described above, the proposed pricing for connectivity services is directly related to the relative costs to the Exchange to provide those respective services and does not impose a barrier to entry to smaller participants. Accordingly, the Exchange offers direct connectivity alternatives and various indirect connectivity (via third-party) alternatives, as described above.

The Exchange recognizes that there are various business models and varying sizes of market participants conducting business on the Exchange. The Exchange's incremental aggregate costs for all connectivity services are disproportionately related to Members with higher message traffic and/or Members with more complicated connections established with the Exchange, as such Members: (1) consume the most bandwidth and resources of the network; (2) transact the vast majority of the volume on the Exchange; and (3) require the high-touch network support services provided by the Exchange and its staff, including network monitoring, reporting and support services, resulting in a much higher cost to the Exchange to provide such connectivity services. Accordingly, the Exchange believes the allocation of the proposed fees that increase based on the number of physical connections or application sessions is reasonable based on the resources consumed by the respective type of market participant (i.e., lowest resource consuming Members will pay the least, and highest resource consuming Members will pay the most), particularly since higher resource consumption translates directly to higher costs to the Exchange.

With respect to equities trading, the Exchange had approximately 4.3% market share of the U.S. equities industry in February 2022.[34] The Exchange is not aware of any evidence that a market share of approximately 4% provides the Exchange with supra-competitive pricing power because, as shown above, market participants that choose to connect to the Exchange have various choices in determining how to do so, including third party alternatives. This, in addition to the fact that not all broker-dealers are required to connect to the Exchange, supports the Exchange's conclusion that its pricing is constrained by competition.

Several market participants choose not to be Members of the Exchange and choose not to access the Exchange, and several market participants also access the Exchange indirectly through another market participant. To illustrate, the Exchange currently has 65 Members. However,

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[34] Market share percentage calculated as of February 28, 2022. The Exchange receives and processes data made available through consolidated data feeds (i.e., CTS and UTDF).

based on publicly available information regarding a sample of the Exchange's competitors, the New York Stock Exchange LLC ("NYSE") has 142 members, Cboe BZX Exchange, Inc. ("BZX") has 140 members, and Investors Exchange LLC ("IEX") has 133 members.[35] If all market participants were required to be Members of the Exchange and connect directly to the Exchange, the Exchange would have over 130 Members, in line with these other exchanges. But it does not. The Exchange currently has approximately half of the number of members as compared to these other exchanges.

Separately, the Exchange is not aware of any reason why market participants could not simply drop their connections and cease being Members of the Exchange if the Exchange were to establish unreasonable and uncompetitive prices for its connectivity services. Market participants choose to connect to a particular exchange and because it is a choice, MEMX must set reasonable pricing for connectivity services, otherwise prospective Members would not connect and existing Members would disconnect, connect through a third-party reseller of connectivity, or otherwise access the Exchange indirectly. The Exchange reiterates that several Members and non-Members did in fact reduce or discontinue use of connectivity services provided directly by the Exchange in response to the fees adopted by the Exchange. No market participant is required by rule or regulation to be a Member of or connect directly to the Exchange, though again, the Exchange acknowledges that certain types of broker-dealers might be compelled by their business model to connect and also notes that pursuant to Rule 2.4, certain Members with significant volume on the Exchange are required to connect to the Exchange's backup systems for testing on at least an annual basis.

With regard to reasonableness, the Exchange understands that when appropriate given the

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[35] See NYSE Membership Directory, available at: https://www.nyse.com/markets/nyse/membership; BZX Form 1 filed November 19, 2021, available at: https://www.sec.gov/Archives/edgar/vprr/2100/21009368.pdf; IEX Current Members list, available at: https://exchange.iex.io/resources/trading/current-membership/.

context of a proposal the Commission has taken a market-based approach to examine whether the SRO making the proposal was subject to significant competitive forces in setting the terms of the proposal. In looking at this question, the Commission considers whether the SRO has demonstrated in its filing that: (i) there are reasonable substitutes for the product or service; (ii) "platform" competition constrains the ability to set the fee; and/or (iii) revenue and cost analysis shows the fee would not result in the SRO taking supra-competitive profits. If the SRO demonstrates that the fee is subject to significant competitive forces, the Commission will next consider whether there is any substantial countervailing basis to suggest the fee's terms fail to meet one or more standards under the Exchange Act. If the filing fails to demonstrate that the fee is constrained by competitive forces, the SRO must provide a substantial basis, other than competition, to show that it is consistent with the Exchange Act, which may include production of relevant revenue and cost data pertaining to the product or service.

As described above, the Exchange believes that competitive forces are in effect and that if the proposed fees for connectivity services were unreasonable that the Exchange would lose current or prospective Members and market share. The Exchange reiterates that several market participants have in fact modified the way that they connect to the Exchange in response to the Exchange's pricing proposal. Further, the Exchange has conducted a comprehensive Cost Analysis in order to determine the reasonability of its proposed fees, including that the Exchange will not take supra-competitive profits.

MEMX believes the proposed fees for connectivity services are fair and reasonable as a form of cost recovery for the Exchange's aggregate costs of offering connectivity services to Members and non-Members. The proposed fees are expected to generate monthly revenue of $1,233,750 providing cost recovery to the Exchange for the aggregate costs of offering connectivity services, based on a methodology that narrowly limits the cost drivers that are allocated cost to those closely and directly related to the particular service. In addition, this revenue will allow the Exchange to continue to offer, to enhance, and to continually refresh its

infrastructure as necessary to offer a state-of-the-art trading platform. The Exchange believes that, consistent with the Act, it is appropriate to charge fees that represent a reasonable markup over cost given the other factors discussed above. The Exchange also believes the proposed fee is a reasonable means of encouraging Users to be efficient in the connectivity services they reserve for use, with the benefits to overall system efficiency to the extent Members and non-Members consolidate their usage of connectivity services or discontinue subscriptions to unused physical connectivity.

The Exchange further believes that the proposed fees, as they pertain to purchasers of each type of connectivity alternative, constitute an equitable allocation of reasonable fees charged to the Exchange's Members and non-Members and are allocated fairly amongst the types of market participants using the facilities of the Exchange.

As described above, the Exchange believes the proposed fees are equitably allocated because the Exchange's incremental aggregate costs for all connectivity services are disproportionately related to Members with higher message traffic and/or Members with more complicated connections established with the Exchange, as such Members: (1) consume the most bandwidth and resources of the network; (2) transact the vast majority of the volume on the Exchange; and (3) require the high-touch network support services provided by the Exchange and its staff, including network monitoring, reporting and support services, resulting in a much higher cost to the Exchange to provide such connectivity services.

Commission staff previously noted that the generation of supra-competitive profits is one of several potential factors in considering whether an exchange's proposed fees are consistent with the Act.[36] As described in the Fee Guidance, the term "supra-competitive profits" refers to profits that exceed the profits that can be obtained in a competitive market. The proposed fee structure would not result in excessive pricing or supra-competitive profits for the Exchange.

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[36] See Fee Guidance, supra note 13.

The proposed fee structure is merely designed to permit the Exchange to cover the costs allocated to providing connectivity services with a modest markup (approximately 8%), which would also help fund future expenditures (increased costs, improvements, etc.). The Exchange believes that this is fair, reasonable, and equitable. Accordingly, the Exchange believes that its proposal is consistent with Section 6(b)(4)[37] of the Act because the proposed fees will permit recovery of the Exchange's costs and will not result in excessive pricing or supra-competitive profit.

The proposed fees for connectivity services will allow the Exchange to cover certain costs incurred by the Exchange associated with providing and maintaining necessary hardware and other network infrastructure as well as network monitoring and support services; without such hardware, infrastructure, monitoring and support the Exchange would be unable to provide the connectivity services. The Exchange routinely works to improve the performance of the network's hardware and software. The costs associated with maintaining and enhancing a state-of-the-art exchange network is a significant expense for the Exchange, and thus the Exchange believes that it is reasonable and appropriate to help offset those costs by adopting fees for connectivity services. As detailed above, the Exchange has four primary sources of revenue that it can potentially use to fund its operations: transaction fees, fees for connectivity services, membership and regulatory fees, and market data fees. Accordingly, the Exchange must cover its expenses from these four primary sources of revenue. The Exchange's Cost Analysis estimates the costs to provide connectivity services at $1,143,715. Based on current connectivity services usage, the Exchange would generate monthly revenues of approximately $1,233,750.[38] This represents a modest profit when compared to the cost of providing connectivity services. Even if the Exchange earns that amount or incrementally more, the Exchange believes the proposed fees for connectivity services are fair and reasonable because they will not result in

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[37] 15 U.S.C. 78f(b)(4).

[38] See supra note 17.

excessive pricing or supra-competitive profit, when comparing the total expense of MEMX associated with providing connectivity services versus the total projected revenue of the Exchange associated with network connectivity services. As noted above, when incorporating the projected revenue from connectivity services into the Exchange's overall projected revenue, including projections related to recently adopted market data fees, the Exchange anticipates monthly revenue ranging from $4,296,950 to $4,546,950 from all sources. As such, applying the Exchange's holistic Cost Analysis to a holistic view of anticipated revenues, the Exchange would earn approximately 8.5% to 15% margin on its operations as a whole. The Exchange believes that this amount is reasonable and is again evidence that the Exchange will not earn a supra-competitive profit.

The Exchange notes that other exchanges offer similar connectivity options to market participants and that the Exchange's fees are a discount as compared to the majority of such fees.[39] With respect to physical connections, each of the Nasdaq Stock Market LLC ("Nasdaq"), NYSE, NYSE Arca, Inc. ("Arca"), BZX and Cboe EDGX Exchange, Inc. ("EDGX") charges between $7,500-$22,000 per month for physical connectivity at their primary data centers that is comparable to that offered by the Exchange.[40] Nasdaq, NYSE and Arca also charge installation

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[39] One significant differentiation between the Exchanges is that while it offers different types of physical connections, including 10Gb, 25Gb, 40Gb, and 100Gb connections, the Exchange does not propose to charge different prices for such connections. In contrast, most of the Exchange's competitors provide scaled pricing that increases depending on the size of the physical connection. The Exchange does not believe that its costs increase incrementally based on the size of a physical connection but instead, that individual connections and the number of such separate and disparate connections are the primary drivers of cost for the Exchange.

[40] See the Nasdaq equities fee schedule, available at: http://www.nasdaqtrader.com/trader.aspx?id=pricelisttrading2; the NYSE fee schedule, available at: https://www.nyse.com/publicdocs/nyse/markets/nyse/NYSE_Price_List.pdf; the NYSE Arca equities fee schedule, available at: https://www.nyse.com/publicdocs/nyse/markets/nyse-arca/NYSE_Arca_Marketplace_Fees.pdf; the BZX equities fee schedule, available at: https://markets.cboe.com/us/equities/membership/fee_schedule/bzx/; the EDGX equities fee schedule, available at: https://markets.cboe.com/us/equities/membership/fee_schedule/edgx/. This range is

fees, which are not proposed to be charged by the Exchange. With respect to application sessions, each of Nasdaq, NYSE, Arca, BZX and EDGX charges between $500-$575 per month for order entry and drop ports.[41] The Exchange further notes that several of these exchanges each charge for other logical ports that the Exchange will continue to provide for free, such as application sessions for testing and disaster recovery purposes.[42] While the Exchange's proposed connectivity fees are lower than the fees charged by Nasdaq, NYSE, Arca, BZX and EDGX, MEMX believes that it offers significant value to Members over these other exchanges in terms of bandwidth available over such connectivity services, which the Exchanges believes is a competitive advantage, and differentiates its connectivity versus connectivity to other exchanges.[43] Additionally, the Exchange's proposed connectivity fees to its disaster recovery facility are within the range of the fees charged by other exchanges for similar connectivity alternatives.[44] The Exchange believes that its proposal to offer certain application sessions free of charge is reasonable, equitably allocated and not unfairly discriminatory because such proposal is intended to encourage Member connections and use of backup and testing facilities of the Exchange, and, with respect to MEMOIR Gap Fill ports, such ports are used exclusively in

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based on a review of the fees charged for 10-40Gb connections at each of these exchanges and relates solely to the physical port fee or connection charge, excluding co-location fees and other fees assessed by these exchanges. The Exchange notes that it does not offer physical connections with lower bandwidth than 10Gb and that Members and non-Members with lower bandwidth requirements typically access the Exchange through third-party extranets or service bureaus.

41 See id.

42 See id.

43 As noted above, all physical connections offered by MEMX are at least 10Gb capable and physical connections provided with larger bandwidth capabilities will be provided at the same rate as such connections. In contrast to other exchanges, MEMX has not proposed different types of physical connections with higher pricing for those with greater capacity. See supra note 39. The Exchange also reiterates that MEMX application sessions are capable of handling significant amount of message traffic (i.e., over 50,000 orders per second), and have no application flow control or order throttling, in contrast to competitors that have imposed message rate thresholds. See supra note 22 and accompanying text.

44 See supra note 40.

connection with the receipt and processing of market data from the Exchange.

In conclusion, the Exchange submits that its proposed fee structure satisfies the requirements of Sections 6(b)(4) and 6(b)(5) of the Act[45] for the reasons discussed above in that it provides for the equitable allocation of reasonable dues, fees and other charges among its Members and other persons using its facilities, does not permit unfair discrimination between customers, issuers, brokers, or dealers, and is designed to promote just and equitable principles of trade, 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, particularly as the proposal neither targets nor will it have a disparate impact on any particular category of market participant. As described more fully below in the Exchange's statement regarding the burden on competition, the Exchange believes that it is subject to significant competitive forces, and that the proposed fee structure is an appropriate effort to address such forces.

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

In accordance with Section 6(b)(8) of the Act,[46] the Exchange does not believe that the proposed rule change would impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

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. In particular, while the Exchange did not officially proposed fees until late December of 2021 when it filed the Initial Proposal, Exchange personnel had been informally discussing potential fees for connectivity services with a diverse group of market participants that are connected to the Exchange (including large and small firms, firms with large connectivity service footprints and small connectivity service

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45 15 U.S.C. 78f(b)(4) and (5).

46 15 U.S.C. 78f(b)(8).

footprints, as well as extranets and service bureaus) for several months leading up to that time. The Exchange received no official complaints from Members, non-Members (extranets or service bureaus), third-parties that purchase the Exchange's connectivity and resell it, and customers of those resellers, that the Exchange's fees or the proposed fees for connectivity services would negatively impact their abilities to compete with other market participants or that they are placed at a disadvantage.

As expected, the Exchange did, however, have several market participants reduce or discontinue use of connectivity services provided directly by the Exchange in response to the fees adopted by the Exchange. The Exchange does not believe that the proposed fees for connectivity services place certain market participants at a relative disadvantage to other market participants because the proposed connectivity pricing is associated with relative usage of the Exchange by each market participant and does not impose a barrier to entry to smaller participants. The Exchange notes that two smaller trading firms cancelled connectivity services and elected not to participate on the Exchange directly due to the imposition of fees but these participants were not actively participating on the Exchange prior to disconnecting and likely connected initially due to the fact that there were no fees to connect. The Exchange believes its proposed pricing is reasonable and, when coupled with the availability of third-party providers that also offer connectivity solutions, that participation on the Exchange is affordable for all market participants, including smaller trading firms. As described above, the connectivity services purchased by market participants typically increase based on their additional message traffic and/or the complexity of their operations. The market participants that utilize more connectivity services typically utilize the most bandwidth, and those are the participants that consume the most resources from the network. Accordingly, the proposed fees for connectivity services do not favor certain categories of market participants in a manner that would impose a burden on competition; rather, the allocation of the proposed connectivity fees reflects the network resources consumed by the various size of market participants and the costs to the

Exchange of providing such connectivity services.

Inter-Market Competition

The Exchange does not believes the proposed fees place an undue burden on competition on other SROs that is not necessary or appropriate. In particular, market participants are not forced to connect to all exchanges, as shown by the number of Members of the Exchange as compared to the much greater number of members at other exchanges, as described above. Not only does MEMX have less than half the number of members as certain other exchanges, but there are also a number of the Exchange's Members that do not connect directly to the Exchange. Additionally, other exchanges have similar connectivity alternatives for their participants, but with higher rates to connect.[47] The Exchange is also unaware of any assertion that the proposed fees for connectivity services would somehow unduly impair its competition with other exchanges. To the contrary, if the fees charged are deemed too high by market participants, they can simply disconnect.

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 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)(ii) of the Act[48] and Rule 19b-4(f)(2)[49] 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 shall institute proceedings to determine whether the proposed rule change should be

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47 See supra notes 39-44 and accompanying text.

48 15 U.S.C. 78s(b)(3)(A)(ii).

49 17 CFR 240.19b-4(f)(2).

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 e-mail to rule-comments@sec.gov. Please include File Number SR-MEMX-2022-17 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-MEMX-2022-17. This file number should be included on the subject line if e-mail 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 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, D.C. 20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the 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-MEMX-2022-17 and should be submitted on or before [insert date 21 days from publication in the Federal Register].

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[50]

J. Matthew DeLesDernier,
Assistant Secretary.

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[50] 17 CFR 200.30-3(a)(12).