Principles for Financial Market Infrastructures (PFMIs) Disclosure

This disclosure can also be found at www.ngx.com. For further information, please contact clearing@ngx.com or (403) 974-1700

Responding Institution: Natural Gas Exchange Inc.

Jurisdiction(s) in which NGX operates: Alberta, Canada

Authorities regulating, supervising or overseeing NGX: Alberta Securities Commission, Commodity Futures Trading Commission

Date of Disclosure: December 31, 2014

Abbreviations:

AFI	Approved Financial Institution
ASC	Alberta Securities Commission
Board Code	NGX Board Code of Conduct
Board Policy	TMX Group Limited Timely Disclosure, Confidentiality and Insider Trading Policy
CCP	Central Counterparty
CFTC	Commodity Futures Trading Commission
CSA	Canadian Securities Administrators
CPA	Contracting Party Agreement
CPSS	Committee on Payments and Settlement Systems
CRA	Credit Rating Agency
CRO	Chief Risk Officer
CSR	Clearing, Settlement and Risk
DCO	Derivatives Clearing Organization
ERM Program	TMX Group Enterprise Risk Management framework
FBOT	Foreign Board of Trade
ICE	Intercontinental Exchange, Inc.
IOSCO	International Organization of Securities Commissions
ISP98	International Standby Practices 1998, International Chambers of Commerce Publication No. 590
LC	Letter of Credit
NGX	Natural Gas Exchange Inc.
NGX Board	Board of Directors for NGX
PFMI	Principles for Financial Market Infrastructures
Policy	ERM Policy
QCCP	Qualified Central Counterparty
RAC	Risk and Audit Committee
RMC	Risk Management Committee
RMP	Risk Management Program
TMX or TMX Group	TMX Group Limited

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I. EXECUTIVE SUMMARY

The objective of this Disclosure Report is to provide relevant information to NGX Contracting Parties and market participants on the risk management framework used by NGX to manage the risks it faces as a central counterparty. This disclosure document has been prepared in accordance with the internationally recognized “Principles for Financial Market Infrastructures: Disclosure framework and Assessment methodology” published December 2012 by CPSS-IOSCO.

Headquartered in Calgary, Alberta, Canada, NGX provides electronic trading, central counterparty clearing and data services to the North American natural gas, crude oil, and electricity markets. In this role, NGX operates a non-mutualized, private clearing operation, whereby all market participants directly clear with NGX.

II. SUMMARY of MAJOR CHANGES SINCE LAST UPDATE

This is the initial PFMI Disclosure Report for NGX and, therefore, does not include a summary of major changes. Subsequent versions of this report will include such.

III. GENERAL BACKGROUND ON FMI

A. General Description of the FMI and the Markets it Serves

NGX was incorporated in 1993 and has operated continuously since February 10, 1994. Since beginning operations in February 1994, NGX has developed the AB-NIT (“AECO”) hub into one of the most liquid spot and forward energy markets in North America. In 2008, NGX and ICE launched an operational alliance where by NGX uses ICE’s front end trading technology and provides clearing services for ICE’s US physical gas products. NGX has operated as a wholly owned subsidiary of TMX Group Limited since 2004 (“TMX” or “TMX Group”) or an affiliate whose key subsidiaries operate cash and derivative markets and clearinghouses for multiple asset classes, including equities, fixed income and energy.

NGX is the clearinghouse for all cleared transactions in the NGX markets and ICE’s US physical gas markets. In this role, NGX maintains a secure and efficient clearing operation, managing various risks across market participants and products.

NGX acts as the central guarantor for all cleared transactions, acting as the buyer to every seller, and the seller to every buyer. This provides full cycle anonymity and introduces a neutral third party obligated to ensure the performance on both sides. There is no mutualized or legal relationship amongst counterparties and all collateral is segregated and for owner usage only.

Since each Contracting Party agrees to make NGX the counterparty to the transaction, the Contracting Parties look to NGX to manage risks to the ongoing operation of the clearinghouse.

NGX is committed to ensuring the security and integrity of the clearing operation. NGX does not enter into transactions nor take positions in energy products for any reason other than to provide clearing services.

Key Metrics (as at September 30, 2014)

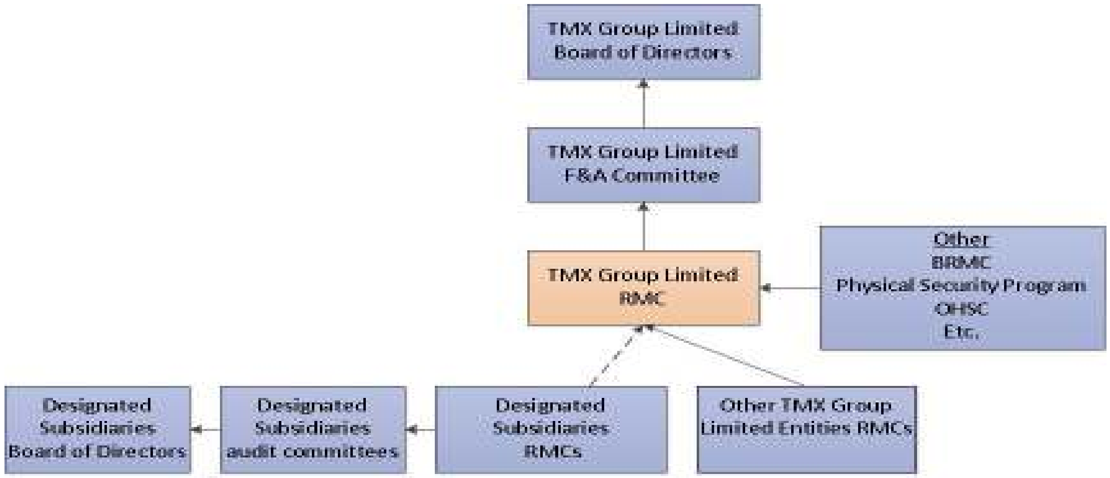
TRADED VOLUMES		
	Volume Equivalent (GJ's)	Notional Value ($millions, CAD)
Total Volume Traded	**9,485,810**	**$44,786.9**
Natural Gas	9,200,891	$43,486.3
Electricity	284,252	$1,297.8
Crude Oil	666	$2.8

COLLATERAL		
	($millions, CAD)	% of Total
Total Collateral Held	**$2,840.4**	**100%**
Total Cash	$606.1	21.3%
Total Letter of Credit	$2,234.3	78.7%
Acceptable forms of collateral: cash, letter of credit from an approved financial institution		

GUARANTEE FUND ($millions, CAD) – Cover 1	
Total Finance Resources	**$138.7**
Total NGX Capital	$45.9
Total Default Insurance*	$92.8
**Default Insurance of $100MM adjusted for deductible and potential liquidity risk*	

B. General Organization of the FMI

The Risk Management Framework and Governance structure of NGX is part of the broader TMX Risk Management Governance Structure. NGX is recognized as a designated subsidiary of TMX Group. The chart below outlines the relationship between NGX and affiliate risk management committees.



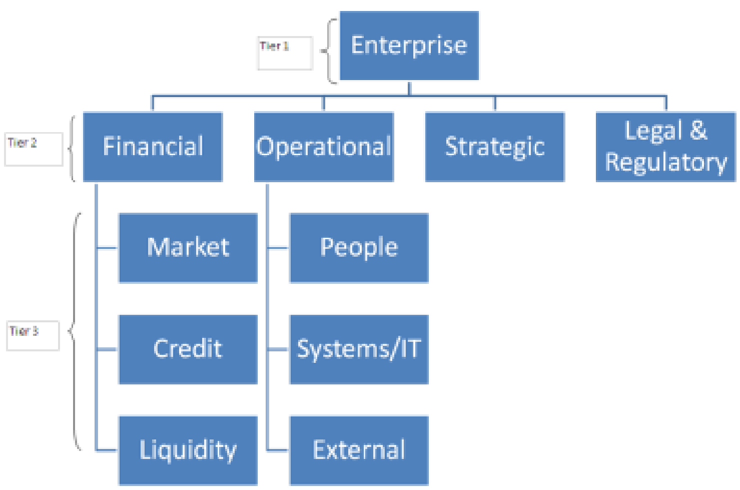
* Designated Subsidiaries:
CDS, CDCC, NGX, TMX Equity

The governance structure consists of the NGX Board of Directors, including its Risk and Audit Committee, NGX Senior Management team, business units and corporate functions, risk management functions and TMX Internal Audit. The NGX Board, directly or through its Risk and Audit Committee ("RAC"), is responsible for approving risk management framework policies and risk appetite statements, and overseeing the adequacy and operating effectiveness of the risk management program. The roles and responsibilities of the senior management team directly, or through an Internal Risk Management Committee ("IRMC") include ensuring the appropriate design, operation and management of the risk management program, ensuring the accuracy, timeliness and consistency of risk management reporting, and reviewing periodic risk and performance reports as provided by NGX's Chief Risk Officer ("CRO"). Each business unit and corporate function have responsibilities for effectively managing NGX's clearing agency risks by establishing risk identification, assessment, measurement, management, monitoring and reporting processes and controls that are in accordance with the risk management program while maintaining adequate documentation of procedures. Risk management functions, including decision making in critical and emergency situations, are performed by the Clearing, Settlements and Risk team at NGX ("CSR"). CSR responsibilities include providing guidance on the risk management program, ensuring the implementation and ongoing compliance of the risk management program, planning, designing and implementing risk management practices and business continuity plans, developing external risk reporting protocols and disclosures where required or warranted for best practices, and periodically reporting to the NGX Board of Directors or its Committees as appropriate. NGX's CRO is responsible for the CSR functions and shall report directly to the independent chair of the NGX RAC. The CRO is responsible for the overall implementation of the Enterprise Risk Management framework and develops policies and procedures to ensure that NGX remains PFMI compliant.

In addition, TMX Risk Management is responsible for coordinating the effective and consistent planning, designing and implementation of the TMX Group risk management program. It monitors the ongoing compliance and reporting of the risk management program across TMX. The internal audit function of TMX provides independent assurance to both the NGX and TMX Boards of Directors and senior management teams on the effectiveness of risk management policies, processes and controls, and management's assertions of control statuses across TMX.

The risk policies adopted by NGX are structured in a hierarchy composed of three tiers, with the ERM Policy ("Policy") as the highest level (Tier 1) risk management policy. The second tier (Tier 2) is made up of four policies covering financial, operational, strategic and legal and regulatory risks. The financial risk policy consists of three Tier 3 policies (market, credit and liquidity risks). The operational risk policy consists of three Tier 3 risk policies (people, systems/IT and external risks). Tier 2 and Tier 3 policies expand upon the principles identified in the Policy and the contents of the higher tier policies within the same hierarchy govern all the lower tier policies.

As part of the on-going effort to expand the integrated ERM program across TMX Group, NGX has adopted the risk management policies that are applicable on a TMX Group basis as well as adding additional objectives, principles, governance or processes for the management of material risks that are specific to NGX. The structure of the TMX Group ERM policies is as follows:



C. Legal and Regulatory Framework

NGX is incorporated under the *Canada Business Corporations Act*. The ASC is NGX's lead regulator in Canada. NGX is recognized by the ASC under section 67 of the *Securities Act* (Alberta) as a clearing agency for natural gas, electricity and related contracts by an order issued effective October 9, 2008. The order was subsequently varied on: (i) April 9, 2009 to allow NGX to also offer crude oil commodity contracts; (ii) on July 11, 2012, in connection with the acquisition of NGX's then parent company, TMX Group Inc., by Maple Group Acquisition

Corporation (renamed TMX Group Limited); and (iii) on December 19, 2013 to require NGX to comply with the PFMIs. The Bank of Canada together with the CSA formally recognized NGX as a Qualified Central Counterparty on July 28, 2014.

NGX is also regulated by the Commodity Futures Trading Commission ("CFTC") in the U.S. as a Derivatives Clearing Organization ("DCO"). The CFTC registered NGX as a DCO on December 12, 2008, which registration order was amended on March 20, 2013 following the implementation of *Dodd-Frank Wall Street Reform and Consumer Protection Act*.

NGX has filed an application with the European Securities and Markets Authority ("ESMA") to be recognized as a third country CCP in accordance with Article 25 of the European Markets Infrastructure Regulation. The application has been deemed complete and NGX is awaiting ESMA's decision.

Each NGX Contracting Party is required to enter into the Contracting Party's Agreement ("CPA") which sets out the rules of the NGX clearing system. The CPA is governed by the laws of the Province of Alberta and the federal laws of Canada applicable therein.

D. System Design and Operations

NGX offers a number of exchange traded products for trading and facilitates their acceptance for clearing through a variety of trade venues, including electronic execution via WebICE, Shorcan Energy Brokers, and Alberta Watt Exchange. Transactions in NGX products completed on these platforms are captured and routed to NGX systems automatically for clearing in the NGX clearinghouse. Prior to being accepted for execution, clearing participants must successfully complete the required membership application process which includes the implementation of trading permissions by the NGX Clearing team. Multiple verification and reconciliation checks are performed intraday to ensure delivery of the respective system trade files to NGX.

Once a trade file is received by NGX, the trade is processed in real-time, immediately updating a client's trading reports and risk position found in the NGX web reports. NGX personnel monitor all updates during trading hours and physical and financial trading and clearing reports are continuously updated and monitored to ensure real-time information and accuracy for NGX and its participants.

The NGX clearing system ("CS") has four major components:

1. **DTS** – Data Transfer Service is responsible for loading and validating the company, user and trade files from the various exchanges like ICE or NGX. This is the entry point for trade information into the system. Once a trade has been received it is put on to the message queue for further processing. DTS is monitored in real time by both NGX Operations and IT groups.

2. **CS Internal** – Clearing System Internal is the main application used to perform all clearing functions. It is a read write application that is only available to internal NGX staff. All reporting functions take place here including operational, risk and financial.

3. **CS External** – Clearing System External is a modified version of the internal application. It is a read only application that is accessible over the internet to NGX participants. Each participant must have a valid login to use the application. All reporting functions take place in this application including operational, risk, and financial.

4. **Compliance** – Compliance provides specialized reporting and investigation capabilities to NGX's internal compliance staff. It is also used to automatically upload information to NGX's regulators.

IV. PRINCIPLE-BY-PRINCIPLE SUMMARY

Principle 1: Legal Basis

An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.

Key Consideration 1: The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.

NGX's rules (the "CPA") are governed by the laws of the province of Alberta, and the federal laws of Canada applicable therein. NGX is recognized as a Clearing Agency and Exchange by the Alberta Securities Commission ("ASC"), has exemptive relief from applicable regulation in Ontario, British Columbia, Quebec, Manitoba and Saskatchewan. NGX is a registered Derivatives Clearing Organization ("DCO") and a Foreign Board of Trade ("FBOT") under the jurisdiction of the Commodity Futures Trading Commission and is subject to all laws pertaining to the netting and holding of collateral. All recognition orders are publicly available on the respective regulatory body website (see Section 5 for a list of websites).

NGX has filed an application with the European Securities and Markets Authority ("ESMA") to be recognized as a third country CCP in accordance with Article 25 of the European Markets Infrastructure Regulation. The application has been deemed complete and NGX is awaiting ESMA's decision.

In addition to the regulatory recognition orders, NGX conducts a financial review and ensures that each potential Contracting Party meets certain collateral threshold and operational requirements before becoming a Contracting Party. NGX also takes collateral, has in place insurance to cover certain trading risks, and takes a security interest in cash collateral. Each Contracting Party is legally bound by the CPA. The CPA sets out the rights and obligations of NGX and Contracting

	Parties. The CPA permits novation and addresses trades made an error (described under Principle 8). NGX products qualify as eligible financial contracts which under Canadian law provide a safe harbour from Canada's insolvency regime and enable netting and other activities with respect to NGX products. The finality of payment provisions set out in NGX's rules, together with the federal insolvency regime under Canadian law providing a safe harbour for eligible financial contracts satisfy finality of settlement. Further, NGX becomes a party to the transaction enabling it to ensure finality of the transaction.
Key Consideration 2: An FMI should have rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations.	
	The CPA is subject to an extensive internal and external review process. NGX's settlement bank and insurer also review and approve material changes in writing generally following a dialogue. The CPA is posted to NGX's public website and outlines standard rules for participants. Contracting Parties are notified of all amendments in advance of their effectiveness. As a DCO, NGX must provide an annual Chief Compliance report to the CFTC demonstrating compliance with each rule and regulation. In accordance with CFTC regulations, rule changes are self-certified with the CFTC by providing the rule change and a written explanation. Some require discussion with the CFTC. The ASC also reviews and requests a dialogue if necessary and conducts regular audits of NGX. Various legal opinions from external counsel have been issued to support the legal certainty of material aspects of NGX's rules, procedures and contracts. NGX regularly engages external counsel in particular for matters requiring specialized expertise. As the laws applicable to NGX have changed over the years and this analysis is carried out on an ongoing basis, inconsistencies have been identified and changes have been made to conform with amendments to Canadian and US laws.
Key Consideration 3: An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.	
	In Canada, the ASC has granted NGX orders recognizing it as an Exchange and Clearing Agency. Alberta is NGX's primary regulator in Canada. NGX has been granted exemption orders from the Ontario Securities Commission ("OSC"), the Manitoba Securities Commission, the British Columbia Securities Commission, the Financial-and Consumer Affairs Authority in Saskatchewan and the Authorité des marché financiers in Quebec. In the U.S., NGX is registered as a DCO to operate as a clearing house and is registered as an FBOT to provide direct market access to U.S. participants. The recognition orders are made publicly available on the respective regulatory body's website.
Key Consideration 4: An FMI should have rules, procedures, and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed, or subject to stays.	
	NGX achieves a high level of confidence that the rules, procedures and contracts related to its

operations are enforceable in all relevant jurisdictions identified in Key Consideration 1 through internal and external legal analysis and ongoing oversight by its regulators.

NGX achieves a high degree of certainty that its rules, procedures and contracts will not be voided, reversed or subject to stays through internal and external legal analysis. The governing law with respect to the CPA and most material contracts is Alberta law and the federal laws of Canada applicable therein. Most Contracting Parties or other parties with which NGX does business are based in either Canada or U.S. All of these jurisdictions have stable legal regimes. NGX regularly updates its regulators in both Canada and the U.S. through quarterly, annual and material issue reporting. The CFTC also reviews the Chief Compliance Officer Report annually and both the CFTC and ASC conduct reviews of NGX. Prior to any rule changes, NGX must provide a self-certification regarding compliance with CFTC rules and provide an advance copy of the changes to the ASC. This extensive review and communication process ensures that such issues are identified early. NGX is not aware of any circumstances in which its actions under its rules, procedures or contracts could be voided, reversed or subject to stays. NGX has Canadian legal opinions confirming products are Eligible Financial Contracts and therefore receive special treatment under applicable bankruptcy and insolvency laws and would be removed from a stay.

Key Consideration 5: An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.

NGX has obtained independent external legal advice on this matter. NGX has received Canadian and U.S. legal opinions from external legal parties, which were provided to the CFTC and regulators to give comfort on the applicability of Alberta insolvency laws to transactions cleared by NGX. All transactions cleared by NGX are subject to Alberta law.

Principle 2: Governance

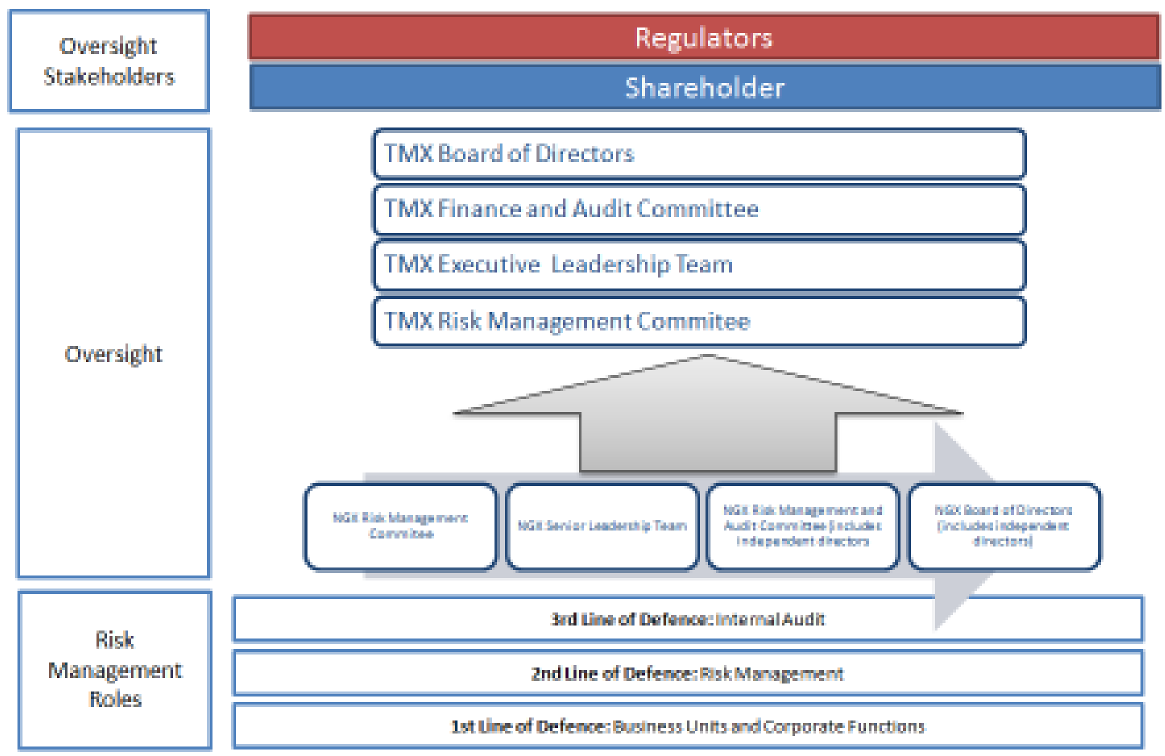
An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.

Key Consideration 1: An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations.

NGX adheres to the TMX Group Risk Management Principles which include:

a) promoting and maintaining an enterprise-wide ethical culture that values the importance of effective risk management in day-to-day business activities and decision making, and encourages frank and open communication;
b) business unit and corporate function ownership of all risks assumed in activities and accountability for the effective management of those risks, supported by the risk management and internal audit divisions also includes adequately defining responsibilities

	and levels of authority for risk-taking across the enterprise; c) employing effective and consistent risk management processes across the enterprise to ensure risks are transparent and remain within the approved risk appetite; d) employing sufficient resources and effective tools, methods, models and technology to support risk management processes; and e) ensuring the ERM Program reflects industry standards, legal and regulatory requirements; which is regularly reassessed. The risk management principles are embedded within the NGX objectives which are clearly defined through an annual strategic planning process involving NGX senior management. This process identifies corporate objectives taking into account the opportunities and risks of the business on a long-term and short-term basis. The NGX senior management team and NGX Board monitor NGX's performance against both short-term and long-term strategic plans and performance review/evaluations are performed annually.
Key Consideration 2: An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.	
	NGX has a senior management team, a Risk Management Committee ("RMC"), a Board of Directors (the "Board") and a Board Risk and Audit Committee ("RAC"). The NGX Board currently has five members including the NGX President and two independent directors (one of whom is the Chair of the Board). The Risk and Audit Committee has three members and the Chair of the RAC is an independent director. NGX has a Board Code of Conduct (the "Board Code") which is posted to the NGX website and has adopted the TMX Group Limited Timely Disclosure, Confidentiality and Insider Trading Policy (the "Board Policy"). NGX has also put in place a Board Mandate, a Board Risk and Audit Committee Charter and a Risk Management Committee Charter. NGX's parent company, TMX has a Governance Committee which reviews and enforces the Board Code and Board Policy. The names of the members of the NGX Board are made publicly available. NGX provides the TMX Board, the NGX Board and the NGX senior leadership with quarterly and annual reports. Pursuant to its recognition orders from the ASC and its exemption order from the OSC, NGX must comply with certain corporate governance requirements. NGX also provides the ASC and CFTC with certain quarterly, annual and other reports regarding other performance metrics, risk management and strategic goals and planning. The ASC recognition order and the OSC exemption order also describe governance principles that apply to NGX as a regulated entity and are publicly available. The governance framework developed by NGX, in conjunction with its parent company TMX Group Limited, is shown below. The graphic illustrates the extensive "checks and balances" that are in place to ensure rigorous risk management controls and governance.



Key Consideration 3: The roles and responsibilities of an FMI's board of directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage member conflicts of interest. The board should review both its overall performance and the performance of its individual board members regularly.

The NGX Board is primarily responsible for providing governance and stewardship to NGX. It is in charge of appointing a competent senior management team to run the day-to-day operations of NGX as well as overseeing and supervising the management of the business of NGX by that team. The Board is also responsible for overseeing NGX's systems of corporate governance and financial reporting and controls to ensure that NGX reports adequate and fair financial information to its parent company, TMX, and that NGX engages in ethical and legal corporate conduct. In addition the Board approves any waivers of the Codes and reviews the Codes annually. The Board Code contains specific policies in respect of conflicts of interest and fosters a climate of honesty and integrity.

The NGX Board is responsible for setting the standards of business conduct contained in the Board Code. The NGX Board regularly reviews and updates these standards as it deems appropriate to reflect changes in the legal and regulatory framework applicable to NGX, the business practices within NGX's industry, NGX's own business practices, and the prevailing ethical standards of the communities in which NGX operates.

	With respect to corporate governance, the NGX Board is expected to do the following: a. Establish an appropriate system of corporate governance. b. Establish committees and approve their respective charters and the limits of authority delegated to each committee. c. Review and assess the adequacy of the charter of each committee of the Board on an annual basis. d. As required, request the Governance Committee or the Human Resources Committee of TMX to recommend to the Board for approval a candidate for appointment as CEO. e. Establish appropriate processes for the regular evaluation of the effectiveness of the Board, its chair, all the committees of the Board and their respective chairs, and all the members of the Board and its committees. f. Approve the nomination of directors. g. In consultation with the TMX's Governance Committee, review the adequacy and form of directors' compensation to ensure it realistically reflects the responsibilities and risks involved in being a director. h. In consultation with the TMX's Governance Committee, establish a minimum attendance expectation for Board members in respect of Board and committee meetings, keeping in mind the principle that the Board believes that all directors should attend all meetings of the Board and each committee on which he or she sits, and review in advance all the applicable materials for such meetings. i. Establish appropriate processes to ensure that the independent members of the Board have the ability to meet to discuss the business and affairs of the Corporation without management or non-independent members of the Board being present. j. Establish clear and direct lines of responsibility and accountability, particularly between management and the board, and ensure sufficient independence for key functions such as risk management, internal control, and audit. k. Establish processes to ensure that the decisions of TMX and its affiliates are not detrimental to the Corporation. The Chair of the NGX Board is selected by the Board from the Directors elected by the sole shareholder. He/she provides leadership to the Board in matters relating to the effective execution of all Board responsibilities and works with the CEO to ensure that the organization fulfills its responsibilities to stakeholders including the sole shareholder, employees, clearing members, governments and the public.
Key Consideration 4: The board should contain suitable members with the appropriate skills and incentives to fulfill its multiple roles. This typically requires the inclusion of non-executive board member(s).	
	NGX carefully selects directors with appropriate skills and knowledge to create the right overall mix of expertise including financial literacy, commodities, derivatives, clearing and risk management and reviews the individuals and overall composition each time the Board is reappointed.

	The Board includes independent board members. Independent directors meet the definition of independence set out in local laws and the CFTC subpart C DCO rules.
Key Consideration 5: The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities for the operation and risk management of the FMI.	
	NGX carefully selects management with appropriate skills and knowledge to create the right overall mix of expertise including technology, finance, legal, clearing and risk management and the NGX President reviews the individuals regularly and at least annually on a formal basis. NGX's Board monitors the performance of the NGX President against a set of mutually agreed upon corporate objectives aimed at maximizing shareholder value. Annual performance reviews are conducted across all members of the leadership team measuring performance against corporate and personal objectives. NGX's Senior Leadership team is comprised of the heads of all departments including Clearing/Risk/Settlements, IT, Legal, Finance, Marketing, and Business Development. The roles and responsibilities of management are set by the President of NGX with a view to the core objectives of NGX and management performance. This is done formally on a quarterly basis and informally on an ongoing basis. Further, written objectives are reiterated by the heads of each business department, including Clearing and Operations, to direct reports. Potential conflicts of interest are mitigated by a) the collective objectives of the Senior Leadership team to maximize shareholder value while maintaining its public interest mandate and b) the extensive governance framework in place to allow for the effective risk management of NGX's clearinghouse. Any actions that result in reduced risk management standards below the requisite standards would potentially a) expose the clearinghouse to losses resulting from inadequate collateral and/or financial resources, b) undermine the confidence of clearinghouse participants, and c) put NGX offside with respect to its Board and regulatory risk management requirements. Any one of these potential outcomes would significantly diminish the value of the clearinghouse which directly contradicts the collective objectives of NGX's Senior Leadership team. Accordingly, the Senior Leadership team pays special attention to risk management matters, including establishing steering sub-committees to manage implementation of the Principles for Financial Management Intermediaries (PFMI) and Dodd Frank requirements. The biographies of NGX's Chief Risk Officer, Steve Lappin, and Chief Compliance Officer, Cheryl Graden, are provided below: • **Stephen Lappin**, **Chief Risk Officer**, is responsible for the clearing and risk operations at NGX. Prior to joining NGX in May 2009, Stephen was Vice President Finance at the Canadian crude oil exchange, NetThruPut Inc. (an Enbridge Inc. affiliate) since 1998. Prior to that, he held various positions in commercial lending with TD Bank. Stephen, a Chartered Financial Analyst, holds an MBA from the University of Alberta and B.Mgt from the University of Lethbridge. Reporting to the Chair of NGX's Risk and Audit Committee, Stephen is accountable for managing the business risks in accordance with Board approved

	risk policies and appetite as well as global regulatory standards for qualified central counterparties. In addition, he is responsible for the development and execution of policies directing settlement and clearing operations. • **Cheryl Graden, Chief Compliance Officer** has a background in energy law coming from Aquila Networks in Canada. Prior to Aquila the CCO was in private practice at Bennett Jones LLP and Torys LLP practicing in the areas of corporate, commercial securities and energy law. Cheryl graduated from Osgoode Hall Law School with an LLB in 1996 and received a Masters degree in Securities Law in 2004. She is responsible for managing relationships with multiple regulators, drafting all NGX regulatory applications and analyzing the effects of current or proposed regulations.
Key Consideration 6: The board should establish a clear, documented risk-management framework that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the board.	
	NGX is subject to the TMX Group Enterprise Risk Management ("ERM") framework as described in Section B "General Organization of the FMI for the Risk Management Framework". TMX Group Risk Management is responsible for the design and coordination of the ERM Program in addition to the ongoing compliance and reporting for the Program across TMX Group. The ERM framework defines the governance structures and responsibilities and includes written risk policies at all levels which define NGX's risk appetite, highlight the key risks, and describe the manner in which those risks are properly managed. The ERM framework is structured in a manner that ensures that the risk management functions have sufficient authority, independence, resources, and access to the Board. In addition, NGX has documented procedures and controls identifying the range of risks to which it is exposed, including procedures for monitoring and assessing those risks. These items are subject to an audit performed by TMX Group internal audit at least once per year, and are reviewed as required. The reporting structure for the NGX RMC as well as that of the TMX Group RMC is described in Section B of this report.
Key Consideration 7: The board should ensure that the FMI's design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.	
	NGX's functional departments interact with Contracting Parties as appropriate to obtain feedback on major initiatives, rules, clearinghouse design, etc. A variety of other stakeholders, including regulators, are consulted on matters with a potential impact on the public. Pursuant to ERM Program, significant or material matters are taken to the Board for review, discussion or approval. NGX internal policies also address conflicts of interest and ensure these matters are adequately

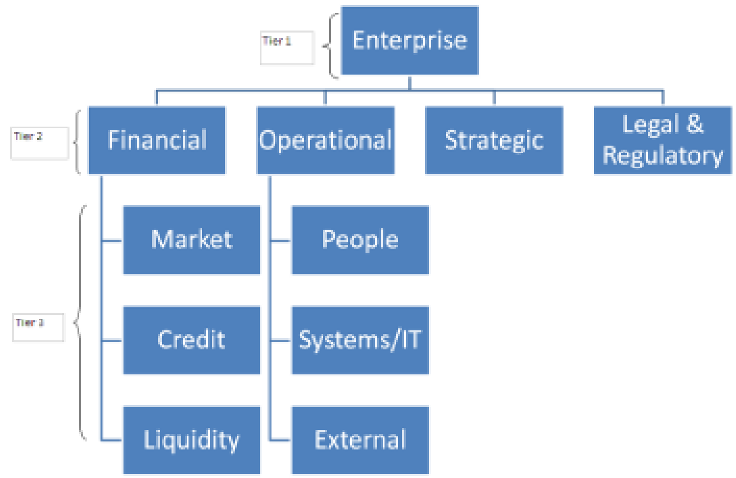
	managed. NGX also seeks input on various matters from its Customer Advisory Committee consisting of certain NGX participants. Major decisions are communicated to various stakeholders directly through NGX Senior Management and NGX employees as appropriate, depending on the issue and expected impact. Formal presentations may also be given by staff as appropriate. Major decisions resulting in rules changes must be publicly disclosed on the NGX website pursuant to regulatory orders. Operational notices are also posted to the NGX website.

Principle 3: Framework for the Comprehensive Management of Risks

An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.

Key Consideration 1: An FMI should have risk-management policies, procedures, and systems that enable it to identify, measure, monitor, and manage the range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.

	Risks that arise naturally under the operations of NGX include credit, commodity market, legal, liquidity, operational, and settlement. The risk policies adopted by NGX are structured in a hierarchy composed of three tiers, with the ERM Policy ("Policy") as the highest level (Tier 1) risk management policy. The second tier (Tier 2) is made up of four policies covering financial, operational, strategic and legal and regulatory risks. The financial risk policy consists of three Tier 3 policies (market, credit and liquidity risks). The operational risk policy consists of three Tier 3 risk policies (people, systems/IT and external risks). The lower tier policies expand upon the principles identified in the Policy and the contents of the higher tier policies within the same hierarchy govern all the lower tier policies.



NGX also has policies, procedures and systems in place at an operational level to address these risks in a prudent and proficient manner. NGX has documented procedures which outline application of given risk policies. Credit, Commodity Market, and Settlement risks are addressed through NGX's Clearing and Settlement Procedures and communicated to Contracting Parties and stakeholders through the Margin Methodology Guide. Operational risks are addressed through the Business Continuity Procedures ("BCP") and Disaster Recovery Procedures ("DRP"). Legal risk is actively mitigated with internal and external legal analysis and regulatory oversight.

NGX's risk management business unit, lead by the NGX CRO, is responsible for the regular review and updating of the risk management policies, procedures and systems. All material changes must be approved by the NGX RMC. The RMC manages a variety of matters relating to risk management, including determining the eligibility of products for clearing, setting standards for membership and advising the NGX Board on proposed changes to NGX's risk model and default procedures. In addition it is required to review the policies and procedures of principal risks, with updates on those risks at least semi annually.

NGX monitors risk management performance by conducting daily back-testing and stress testing to ensure that sufficient collateral or financial resources would be in place for an extreme, but plausible default event. Reviews of margin rates to reflect recent risk intensity are performed at least monthly and more frequently if performance indicates changing market conditions. Other policies and procedures are considered at any time back-testing and stress testing are performed, and updated as appropriate.

NGX utilizes an internally developed system with real-time reporting to monitor Contracting Party portfolios which reflect up-to-the-minute prices and positions, capturing exposure as outlined in procedures. NGX requires Contracting Parties to fully collateralize their portfolio, including costs that are estimated to occur during a liquidation of those positions in the event of default. NGX

	ensures that a buffer of collateral exists to cover unforeseen amounts, including new trades. NGX reporting allows for aggregation of positions within each Contracting Party clearing account, but does not aggregate between other accounts or Contracting Parties. Collateral is held in segregated accounts that are strictly used for resolving a default of the respective Contracting Party. NGX has a Customer Advisory Committee in place that meets twice a year. Consultations involve an overview of NGX and any changes since the last meeting followed by a question and discussion period. Attendees include marketing and trading participants from NGX's most active Contracting Parties.
Key Consideration 2: An FMI should provide incentives to participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.	
	NGX provides a number of web based reports for Contracting Parties to review positions and associated margin requirements in real-time. Since Contracting Party positions are fully collateralized with a buffer for unforeseen events, Contracting Parties are naturally incented to have reduced risk portfolios as collateral levels are directly related to the risk of a portfolio and portfolio size. NGX also establishes and maintains risk limits for each Contracting Party. NGX is a non-mutualized and fully collateralized clearinghouse whereby all Contracting Parties are margined before full utilization. NGX's Risk Limit policy is structured such that collateral costs are directly tied to portfolio size. Collateral requirements for a Contracting Party increase when the risk limit is exceeded. The structure of this policy provides incentive for Contracting Parties to manage their position in order to minimize capital costs. NGX's Margin Methodology Guide is publicly disclosed which enables existing and potential participants to evaluate the risk management model employed by NGX. Together with a number of web based reports a Contracting Party is able to review their position as appropriate.
Key Consideration 3: An FMI should regularly review the material risks it bears from and poses to other entities (such as other FMIs, settlement banks, liquidity providers, and service providers) as a result of interdependencies and develop appropriate risk-management tools to address these risks.	
	NGX risk committees are mandated to regularly review the risks it bears from and poses to other FMIs, settlement banks, liquidity providers, exchanges and other trading platforms, and service providers. NGX has a primary interdependency with its settlement bank in its functions of retaining Contracting Party collateral, facilitating daily and monthly invoice settlement process, and providing NGX with credit facilities. NGX performs ongoing credit analysis and monitoring of exposure to its settlement bank while regularly monitors the settlement bank's ability to perform required tasks. To a lesser extent, NGX has interdependencies on financial institutions issuing Letters of Credit ("LC") on behalf of Contracting Parties. NGX also monitors the credit rating of financial institutions issuing letters of credit to ensure the issuer credit rating is A or higher, and ensures aggregate exposure from each bank remains within specified limits. Monthly risk reports

	are provided to NGX's CRO which provide details related to settlement bank exposure and may be reviewed in conjunction with the NGX Board and RAC as required. NGX markets are listed on the Intercontinental Exchange ("ICE") as part of a platform sharing agreement and as a result, depend on ICE's systems to be available for onscreen trading and trade file data. NGX regularly receives and reviews an SSAE 16 Report for the ICE Trading Platform and ICE eConfirm System. This report includes independent testing and attestation as to the design and effectiveness of the internal controls for the ICE Trading Platform and eConfirm service. NGX also monitors a variety of ICE connections and systems in real time including networking connections, file transfers and APIs. Agreements with NGX's settlement bank and ICE address system availability standards and requirements along with procedures for operations failure and dispute management are reviewed regularly. NGX also has alternate settlement bank arrangements in place that allow NGX to meet settlement obligations in the event of the inability of its primary settlement bank to provide settlement services. NGX conducts daily liquidity stress tests to ensure that there is sufficient liquidity available to resolve non performance within credit facilities. The Clearing group monitors bank concentration risk, credit reports and other factors to determine Contracting Parties overall financial health. The IT department monitors the ICE feed on a daily basis in order to ensure operating reliability. NGX's information and control systems allow for accurate and timely review of exposures at an individual and aggregate level. Performance and sensitivity data is available and reviewed on a daily basis outlining FMI exposures at product and portfolio levels. These reports facilitate measuring and monitoring the corresponding risks enabling NGX staff to identify risks and manage them accordingly.
Key Consideration 4: An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly wind-down. An FMI should prepare appropriate plans for its recovery or orderly wind-down based on the results of that assessment. Where applicable, an FMI should also provide relevant authorities with the information needed for purposes of resolution planning.	
	NGX's Recovery and Wind-down plan outlines the scenarios which could prevent it from providing its critical services as a going concern. Such scenarios include insolvency of the clearinghouse and/or the default of a Contracting Party in an amount that exceeds the financial resources of the clearinghouse. To mitigate the risk of loss resulting from a Contracting Party default in excess of financial resources, NGX maintains sophisticated risk systems to measure exposures in real-time and ensures that collateral is sufficient to cover Contracting Party defaults, including instances of a Contracting Party's insolvency. In addition, NGX maintains sufficient capital resources and a self-funded Guarantee Fund to facilitate an instance of a shortfall arising from the material default or insolvency of a Contracting Party.

With regard to its own operation, NGX maintains sufficient resources to sustain its operations for the period of one year. Of this, the resources necessary to cover the first six months of operating expense is readily available and liquid. Accordingly, NGX maintains sufficient resources to provide for an orderly wind-down should that be required. In this regard, NGX notes that contracts with the greatest liquidity are near- term contracts. In the case of an insolvency of NGX, as discussed below, Contracting Parties would have rights to set-off amounts owed to them by NGX.

In the event NGX decides to wind-down the business, close out procedures are outlined in the CPA and NGX would follow the associated procedures to ensure an orderly and risk managed completion. The CPA gives both NGX and a Contracting Party the right to terminate any outstanding transactions upon NGX insolvency. The terminated transactions will be valued and any accounts receivable/payable from/to a Contracting Party will be set-off to determine any amounts owed to or by NGX to or by any Contracting Party. NGX has obtained external legal opinions confirming that its rights to set-off obligations are preserved under insolvency laws.

Principle 4: Credit Risk

An FMI should effectively measure, monitor, and manage its credit exposure to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two largest participants and their affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions. All other CCPs should maintain, at a minimum, total financial resources sufficient to cover the default of the one participant and its affiliates that would potentially cause the largest aggregate credit exposures to the CCP in extreme but plausible market conditions.

Key Consideration 1: An FMI should establish a robust framework to manage its credit exposures to its participants and the credit risks arising from its payment, clearing, and settlement processes. Credit exposure may arise from current exposures, potential future exposures, or both.

NGX mitigates exposures, including those arising from credit risk, by requiring full collateralization of Contracting Party positions which account for current and potential future exposures related to their respective portfolios. NGX monitors Contracting Party positions and projected near-term positions in real-time to ensure that collateral balances continue to meet margin requirements at all times.

NGX's margin methodology framework is reviewed on an ongoing basis through daily back-testing and stress testing results. New products are fully reviewed prior to implementation, and regularly

	thereafter. Initial margin rates which reflect changing market prices and volatility are updated at least monthly and more frequently in periods of high volatility as required.
Key Consideration 2: An FMI should identify sources of credit risk, routinely measure and monitor credit exposures, and use appropriate risk-management tools to control these risks.	
	NGX's Clearing System is updated continuously throughout the business day with trade data, collateral updates, and market prices which are all used to continuously calculate Contracting Party current and potential future exposures. In addition, NGX implements risk limits for all Contracting Parties which are monitored on a daily basis. Should a Contracting Party exposure breach the risk limit, additional collateral requirements are applied. For clarity, NGX only has secured exposure to Contracting Parties, which provide cash and/or LCs as collateral in support of their own margin requirements. NGX's rules allow for additional eligible collateral support to be requested when a Contracting Party's margin requirement meets or exceeds certain collateral utilization or minimum available margin thresholds as outline in Schedule C of the CPA. Annual reviews are preformed on all Contracting Parties to review company specific risks and ensure each entity continues to meet Minimum Qualification Requirements as outlined in the CPA. Should a Contracting Party be deemed to pose additional risk to the exchange, the entity may be added to the Watchlist which is approved by the CRO and NGX President and reported to the ASC on a quarterly basis. Contracting Parties on the Watchlist are monitored more closely and credit reviews are performed more frequently. Clearing also performs credit reviews on all LC issuing banks at least annually and monitors issuing bank concentration risk on a daily basis. In addition, NGX subscribes to news filtering services, bankruptcy reporting services, and credit rating agency ("CRA") reports while maintaining active participation with industry credit groups.
Key Consideration 3: A payment system or SSS should cover its current and, where they exist, potential future exposures to each participant fully with a high degree of confidence using collateral and other equivalent financial resources (see Principle 5 on collateral). In the case of a DNS payment system or DNS SSS in which there is no settlement guarantee but where its participants face credit exposures arising from its payment, clearing, and settlement processes, such an FMI should maintain, at a minimum, sufficient resources to cover the exposures of the two participants and their affiliates that would create the largest aggregate credit exposure in the system.	
	Not applicable, applies to FMI Payment System and Securities Settlement System classifications.
Key Consideration 4: A CCP should cover its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources (see Principle 5 on collateral and Principle 6 on margin). In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. All other CCPs	

should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure for the CCP in extreme but plausible market conditions. In all cases, a CCP should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount of total financial resources it maintains.	
	NGX requires full collateralization of all Contracting Party current and potential future exposures. Eligible collateral must be provided in the form of cash, LC from an NGX approved financial institution, physical delivery sales credits and positive mark-to-market ("MtM"). NGX does not consider the current product offering to contain items with complex risk profiles other than a small amount of financial gas options which are not correlated with Contracting Party defaults. Furthermore, NGX does not currently believe it is systemically important in any jurisdiction. In addition to fully collateralized Contracting Party positions, NGX maintains financial resources sufficient to meet 12 months operating expenses and the single largest participant collateral shortfall in an extreme, but plausible stress scenario. NGX maintains a cash balance funded by equity and provides access to a self-funded Guarantee Fund of USD $100MM issued by TD Bank held in trust at Bank of New York Mellon for all Contracting Parties to resolve any collateral shortfall upon a Contracting Party default. The USD $100MM Guarantee Fund is supported by a Parental Guarantee issued by TMX and further backed by default insurance for the same amount issued by Export Development Canada ("EDC"). Daily testing is performed to determine that NGX holds sufficient financial resources in the event of a default of its largest Contracting Party credit exposure. Sufficiency of financial resources and guarantee fund are reviewed weekly. Financial resources must be in excess of regulatory minimums and approved by the Manager, Risk Analytics, and Chief Risk Officer to ensure sufficiency. Results are reported monthly to NGX management and quarterly to the ASC and CFTC.
Key Consideration 5: A CCP should determine the amount and regularly test the sufficiency of its total financial resources available in the event of a default or multiple defaults in extreme but plausible market conditions through rigorous stress testing. A CCP should have clear procedures to report the results of its stress tests to appropriate decision makers at the CCP and to use these results to evaluate the adequacy of and adjust its total financial resources. Stress tests should be performed daily using standard and predetermined parameters and assumptions. On at least a monthly basis, a CCP should perform a comprehensive and thorough analysis of stress testing scenarios, models, and underlying parameters and assumptions used to ensure they are appropriate for determining the CCP's required level of default protection in light of current and evolving market conditions. A CCP should perform this analysis of stress testing more frequently when the products cleared or markets served display high volatility, become less liquid, or when the size or concentration of positions held by a CCP's participants increases significantly. A full validation of a CCP's risk-management model should be performed at least annually.	
	NGX regularly reviews the results of all Contracting Parties simultaneously defaulting with prices

	shifting during the liquidation of those positions. To ensure adequacy of total financial resources NGX performs approximately 20 pricing and volatility stress scenarios which are considered extreme but plausible. The largest customer portfolio shortfall given the scenarios is considered for financial resource purposes. Daily stress testing pricing scenarios include relevant peak historic price volatilities, and implied volatilities, which are considered extreme, but plausible given a 5 year history. Additionally, NGX conducts alternate stress scenarios which are beyond extreme but plausible levels which may highlight what levels of price moves or volatility changes may cause concern. Multiple simultaneous customer defaults given the scenarios are considered. Results are distributed to the Manager, Risk Analytics and CRO. If results indicate financial resources are beginning to approach levels of insufficiency immediate action is taken to address as required. Stress testing scenarios are reviewed for adequacy and reasonability in light of current market conditions on a monthly basis and are recalibrated at least annually. Monthly scenario review and results are reviewed and approved by the Manager, Risk Analytics. Annual scenario recalibration is approved by the Manager, Risk Analytics and CRO, followed by dissemination to the NGX RAC and RMC.
Key Consideration 6: In conducting stress testing, a CCP should consider the effect of a wide range of relevant stress scenarios in terms of both defaulters' positions and possible price changes in liquidation periods. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions.	
	The risk exposure of NGX contracts is primarily related to linear commodity price risk. NGX utilizes a wide range of relevant stress scenarios in determining stress testing results under extreme but plausible conditions. Scenarios include relevant peak historic price volatilities, and implied volatilities, which are considered extreme but plausible given a 5 year history. Scenarios also include Polar Vortex (Q1 2014), all commodity price levels increase/decrease, natural gas price increases coupled with electricity price decreases (and vice versa), and a breakdown in the relationship between highly correlated and frequently spread traded products. The simultaneous pressures in funding and asset markets is not relevant to NGX as the collateral backing positions are not exposed to market risk, therefore are likely to be unaffected by the stress test scenarios. NGX also reviews the impact of multiple simultaneous customer defaults.
Key Consideration 7: An FMI should establish explicit rules and procedures that address fully any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI. These rules and procedures should address how potentially uncovered credit losses would be allocated, including the repayment of any funds an FMI may borrow from liquidity providers. These rules and procedures should also indicate the FMI's process to replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner.	
	Should a Contracting Party fail to perform its contractual obligations with NGX, the CPA together with the Clearing and Settlement procedures, outline the process to invoke the liquidation

	procedure. This includes the collapse of the defaulting party's collateral which is then applied to any and all obligations resulting from such failure. In the event insufficient collateral is on hand, NGX may direct payment from the liquid financial resources or Guarantee Fund to cure any outstanding Contracting Party obligations as a result of the default. NGX holds financial resources equal to 12 months operating costs plus the single largest Contracting Party collateral shortfall under an extreme, but plausible market stress condition. Replenishment of any of these financial resources may be through supplemental liquid resources held at NGX or funds raised through the parent organization. Current NGX excess cash reserves would be sufficient to ensure ongoing availability of sufficient financial resources. In the event that financial resources did not remain sufficient following a stress event, NGX could access funds from parent organization. In the event of losses exceeding NGX's financial resources, NGX's Recovery and Wind-down Plan may be triggered and managed accordingly.

Principle 5: Collateral

An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.

Key Consideration 1: An FMI should generally limit the assets it (routinely) accepts as collateral to those with low credit, liquidity, and market risks.

	NGX accepts only USD and CAD cash or LCs in NGX's standard LC format issued by an Approved Financial Institution ("AFI") as defined in the CPA. CRA ratings are used to determine LC issuing bank baseline eligibility requirements and weighting is applied to the CRA rating as one of several factors in assessing credit limits of LC issuing banks. NGX monitors the CRA ratings of LC issuing banks on an ongoing basis and CRA ratings are factored into annual credit reviews conducted on all LC issuing banks. Other factors that impact the assessment of issuing bank risk are the bank country of origin, location of bank issuing branch, LC issuing jurisdiction bank organizational structure and financial ratios. Aggregated issuing bank concentration cannot exceed an internal credit limit and each issuing bank is held to a maximum of 25% of total LC collateral held. Monitoring is performed daily to ensure exposures remain in line with limits which further help to manage and mitigate potential wrong-way risk. It should be noted that for any Contracting Party that that is also an AFI, collateral must be provided in the form of cash or an LC issued through an unrelated AFI. Monthly exposure reports aggregating clearing and issuing bank exposures are provided to the Clearing Manager and CRO and RMC as deemed appropriate. Collateral balances are maintained in the Clearing System, both of which are updated daily upon receipt or return of collateral. All balances are approved by the Clearing Manager in line with NGX collateral and bank policies. Credit reviews of all issuing banks are performed at least annually.

Key Consideration 2: An FMI should establish prudent valuation practices and develop haircuts that are regularly tested and take into account stressed market conditions.	
	Since NGX does not accept any asset classes outside of LCs and cash, MtM valuations are not required for collateral. The LCs accepted by NGX are for a finite value with one day drawdown provisions and cash is liquid, therefore there is no change in the value. As LC's and cash are not subject to mark to market changes, haircuts on cash or LC's are not currently applied to collateral deposited with NGX.
Key Consideration 3: In order to reduce the need for procyclical adjustments, an FMI should establish stable and conservative haircuts that are calibrated to include periods of stressed market conditions, to the extent practicable and prudent.	
	As described above, since LC's and cash are not subject to mark to market changes procyclicality is mitigated in the nature of the instruments themselves. NGX does not currently accept any asset classes outside of LC's and cash and haircuts are not currently applied to collateral deposited with NGX. Cash collateral is held in segregated accounts and is not reinvested or reused by NGX.
Key Consideration 4: An FMI should avoid concentrated holdings of certain assets where this would significantly impair the ability to liquidate such assets quickly without significant adverse price effects.	
	NGX monitors the credit ratings and creditworthiness of LC issuing banks on an ongoing basis and monitors aggregate issuing bank exposures on a daily basis to ensure issuing banks remain within their respective credit limit and concentration limit. In addition, NGX's standard LC format requires one day drawdown provisions which reduce the time to liquidate collateral. As documented in accordance with NGX risk management policies and procedures issuing bank credit analysis and concentration limits are reviewed at least annually. Any changes to the policies are brought through the risk management framework process.
Key Consideration 5: An FMI that accepts cross-border collateral should mitigate the risks associated with its use and ensure that the collateral can be used in a timely manner.	
	All collateral is held at a Canadian Schedule I bank with all cash collateral held in segregated bank accounts controlled by NGX in the name of the Contracting Party. NGX registers a first priority lien in Alberta and the Contracting Party's province or state of incorporation against all cash collateral posted. Cash collateral is not reinvested or reused by NGX. LC's are required to be issued by an AFI through a North American branch in SWIFT form with a one business day payment period upon drawdown notification. LC's are subject to International Standby Practices 1998, International Chambers of Commerce Publication No. 590 ("ISP98") and for matters not addressed by ISP98 are generally governed by the laws of the Province of Alberta and applicable Canadian Federal Law.
Key Consideration 6: An FMI should use a collateral management system that is well-designed and operationally flexible.	
	NGX's collateral management records are maintained in the Clearing System and in a daily

	spreadsheet, both of which are updated throughout each business day as collateral is received/returned. All collateral updates flow through to Real Time Risk Monitor and Margin Requirement reports enabling staff and customers to view current collateral levels along with associated margin requirements. All collateral is held at a Canadian Schedule I bank and monthly audits are performed by both NGX and the bank to ensure accuracy of collateral records. Clearing resources are dedicated to clearing activities, including margining and collateral management on a daily basis subject to market conditions. Resource requirements are assessed on a regular basis as part of NGX's ongoing objectives measurement and strategic planning process.

Principle 6: Margin

A CCP should cover its credit exposures to its participants for all products through an effective margin system that is risk-based and regularly reviewed.

Key Consideration 1: A CCP should have a margin system that establishes margin levels commensurate with the risks and particular attributes of each product, portfolio, and market it serves.

NGX's margin methodology includes the valuation of credit risk through the 55 day physical settlement cycle, initial margin and variation margin (MtM) on all net open forward positions for each clearing account. Contracting party positions are available through an online reporting portal that enables users to see positions and reports related to the Margin Methodology in real time. The Margin Methodology Guide without formula appendices is publicly available through the NGX website and the same guide with formulas is available to any Contracting Party upon request. Clearing personnel work with clients on a regular basis to ensure an ongoing understanding of the margin methodology and associated margin requirements.

Margin Requirements are comprised of the sum of the following three components:

1. **Accounts Receivable ("A/R") Risk** - the value of gas, power and/or crude oil already delivered that generates a net amount owing to NGX;
2. **Variation Margin (mark-to-market)** - a calculation of the price at which an open position could be instantaneously liquidated given current market prices;
3. **Initial Margin (liquidation risk)** - a buffer charged to account for potential adverse changes in market prices (i.e. variation margin) during a liquidation scenario.

As a fully collateralized exchange, NGX holds collateral against Contracting Party margin requirements in alignment with the collateral thresholds outlined in the CPA. The credit exposures of NGX products are limited to invoiced and unpaid deliveries and delivered but not yet invoice deliveries. Current and potential future exposures are calculated for the aggregate portfolios across all NGX products.

Margin calls can be made at any time during the day, but are generally made within the first few hours of trading hours. Collateral deposits resulting from margin calls are due by close of the next

	business day. Should a Contracting Party fail to pay or deposit additional collateral, NGX retains the right under the CPA to invoke the liquidation procedure which includes collapsing the collateral and liquidating the defaulting party's portfolio.
Key Consideration 2: A CCP should have a reliable source of timely price data for its margin system. A CCP should also have procedures and sound valuation models for addressing circumstances in which pricing data are not readily available or reliable.	
	NGX Instrument Settlement Price Methodology Guide outlines the standardized procedures for producing settlement prices and is available to Contracting Parties and regulators upon request. Pricing data is based on trading activity observed in the market and may be used to set prices of similar products (time/location). Additional pricing data may be procured by NGX through third parties when sufficient data is not available. Daily settlement prices are calculated by NGX Marketing and provided to Operations, Clearing and market participants for additional oversight. The settlement price data is used for determining initial margin rates and calculating MtM in accordance with the Margin Methodology Guide. When price data is not readily available, prices are estimated based on historical relationships to prices that are available, as well as a market survey. These prices are always subject to Operations, Clearing and market scrutiny when they are sent out prior to settlement time. The independence is verified by multiple market participants. Initial margin is calculated by assessing the actual price movements that have occurred in recent history of each product, then applying a Value at Risk ("VAR") model to determine the probability of those price movements occurring during a liquidation period. Initial margin is the result of applying this probability to the current market price of each product for each forward date, and is an estimate of the risk within a certain confidence level. Initial margin rates may be estimated conservatively with the data that is available, or may be set equal to a similar product with corresponding risk characteristics. As back-testing is performed on a daily basis, it is quickly noticed if margin rates are inappropriate for any product. Should discrepancies appear, further investigation is performed on the product to determine why the associated initial margin rate(s) are insufficient and recalibrated as required.
Key Consideration 3: A CCP should adopt initial margin models and parameters that are risk-based and generate margin requirements sufficient to cover its potential future exposure to participants in the interval between the last margin collection and the close out of positions following a participant default. Initial margin should meet an established single-tailed confidence level of at least 99 percent with respect to the estimated distribution of future exposure. For a CCP that calculates margin at the portfolio level, this requirement applies to each portfolio's distribution of future exposure. For a CCP that calculates margin at more-granular levels, such as at the subportfolio level or by product, the requirement must be met for the corresponding distributions of future exposure. The model should (a) use a conservative estimate of the time horizons for the effective hedging or close out of the particular types of products cleared by the CCP (including in stressed market conditions), (b) have an appropriate method for measuring credit exposure that accounts for relevant product risk factors and portfolio	

effects across products, and (c) to the extent practicable and prudent, limit the need for destabilising, procyclical changes.	
	NGX utilizes a parametric Value at Risk model to estimate potential future exposure in the event of a Contracting Party default and subsequent 2-day liquidation. The model uses a confidence level of 99.7%, and 2 years of price history with more weight applied to recent history (ex. 70% weight is applied to most recent year). The model assumes a) daily price changes follow normal or lognormal distribution depending on product, b) a Contracting Party portfolio could be liquidated within a two day period upon default, c) previous weighted price changes are indicative of future price changes. Liquidation period model input has been estimated based on previous experience and expectations for future portfolio auctions. The confidence interval is set at a comparatively conservative level, and based on actual experience has delivered desired results. In previous liquidation events NGX has auctioned off portfolios in larger blocks of trades, and requires bidders to respond within a day. Historically, this has provided a good balance of liquidity and price for large and small defaults. As such, the majority of NGX products use a 2-day liquidation period. NGX uses sample periods of 2 years of history with more weight applied to recent history (ex. 70% weight is applied to most recent year). If 2 years of history is not available, NGX uses 100 days of history. For new products NGX often uses a proxy product for determining initial margin rates to ensure that liquidation does not create adverse price defects. In the event of a default, NGX management team members, including members from Legal, Operations, Marketing and Clearing, evaluate the defaulting customers portfolio and other liquidation factors including but not limited to current market conditions, the risk profile and portfolio composition to determine the best liquidation approach. Procyclicality is moderated by utilizing margin rates greater than the prescribed minimum parameters, allowing cushion to stabilize rates in extreme conditions while still meeting regulatory requirements. NGX does not allow collateral with market risk, as such, haircuts are not needed and not subject to procyclicality. The credit strength of each Contracting Party is considered independently, and collateral requirements adjusted as necessary, regardless of economic cycle. Contracting Parties in financial distress are more likely to need a clearinghouse to perform operations. NGX conducts annual credit reviews and subscribe to rating and news agencies to monitor the financial strength of Contracting Parties which may exhibit wrong-way risk. Should a Contracting Party be deemed to pose additional risk to the exchange, the entity may be added to the Watchlist which is approved by the CRO and NGX President and reported to the ASC on a quarterly basis. Contracting Parties on the Watchlist are monitored more closely and credit reviews are performed more frequently.
Key Consideration 4: A CCP should mark participant positions to market and collect variation margin at least daily to limit the build-up of current exposures. A CCP should have the authority and operational capacity to make intraday margin calls and payments, both scheduled and unscheduled, to participants.	
	NGX continuously calculates variation margin on all traded products that have not yet been delivered or expired which represent the change in value since traded. The market prices are updated in real-time based on the last traded price or end of day settlement prices.

Variation margin is comprised of two components:

1. **Offset Gain/Loss** - Any long/short positions that are offset by the opposite short/long position in an equivalent contract for a given day in the future comprise the offset position. Offset positions result in a known (crystallized) gain or loss being applied to the margin requirement for each Contracting Party. If a Contracting Party purchased forward contracts at a price lower than they sold the equivalent contracts, they are marked with a gain in the amount of the difference between the two values. Conversely, if a Contracting Party purchased forward contracts at a price higher than they sold the equivalent contracts, they are marked with a loss in the amount of the difference between the two values. This difference comprises the offset gain/loss portion of the variation margin.
2. **Open Variation Margin** - The exposure to net open positions held by a Contracting Party is calculated by determining the difference between the value of the net open position at the time it was consummated, and its estimated value in the current market.

If a Contracting Party position exceeds NGX margin thresholds as outlined in the CPA, a margin call can be made at any time during the day.

Key Consideration 5: In calculating margin requirements, a CCP may allow offsets or reductions in required margin across products that it clears or between products that it and another CCP clear, if the risk of one product is significantly and reliably correlated with the risk of the other product. Where two or more CCPs are authorised to offer cross-margining, they must have appropriate safeguards and harmonised overall risk-management systems.

NGX provides portfolio initial margin offset credits within a Contracting Party portfolio where there are highly correlated markets and offsetting trades. This methodology offers a menu of spread credits at the customer level for combinations of long and short positions. When spread trades are highly correlated, some of the risk of price movement is hedged as one side's losses would be partly offset by the other side's gains should the market prices change. NGX's portfolio margin model differs from a typical portfolio Value-at-Risk (VaR) in that the residual risk from the spreads and the remaining positions do not go through a diversification process.

NGX allows for correlations with offsets for time and location spreads. In order to qualify for or create a credit, products must have a correlation rate of greater than 50% and a 10% haircut is applied across all qualifying correlations. Correlations are updated on a regular basis to reflect appropriate relationships.

NGX reviews back-testing results of net initial margin after offset credits for certain highly correlated products on a quarterly basis ensuring that NGX's systems are calculating initial margin rates and correlations as intended, in accordance with the model's specifications. In periods of extreme market volatility initial margin rates and correlations are reviewed and updated as required.

NGX does not apply cross-margining with any other CCP.

Key Consideration 6: A CCP should analyse and monitor its model performance and overall margin coverage by conducting rigorous daily backtesting – and at least monthly, and more-frequent where appropriate, sensitivity analysis. A CCP should regularly conduct an assessment of the theoretical and empirical properties of its margin model for all products it clears. In conducting sensitivity analysis of the model's coverage, a CCP should take into account a wide range of parameters and assumptions that reflect possible market conditions, including the most-volatile periods that have been experienced by the markets it serves and extreme changes in the correlations between prices.

NGX monitors portfolio and product level back-testing on a daily basis, with an external review conducted quarterly which includes an annual look-back. Back-testing is performed on two levels to review actual value changes in comparison to initial margin, and exceptions are noted:

1. Product back-testing includes comparison of initial margin to 2-day product price changes.
2. Portfolio back-testing compares total Contracting Party initial margin across all positions to daily change in variation margin.

Coverage is evaluated across products and portfolios, including effects with other commodities within the commodity asset class. NGX targets initial margin coverage not less than the generally accepted guidance appropriate for a single-tailed confidence level of 99 percent. NGX does not apply cross-margining with any other CCP.

NGX's contracts are primarily sensitive to changes in commodity price. As such, stress testing analysis is performed to determine impact of extreme events. The stress testing scenarios are set to include extreme market events, and extreme changes in correlations between prices.

Performance of NGX's margin model has been sufficient to date on existing products including during extreme market conditions. If performance was considered lacking over a short period, less than a month, margin rates would be updated accordingly. If margin methodology was found to underperform over multiple quarters, a more formal review would occur. NGX discloses margin model performance results to the ASC on a quarterly basis and to Contracting Parties upon request. Back-testing results are shared with the Manager, Risks Analytics, Clearing Manager and CRO regularly, with a formal review completed on a quarterly basis.

Key Consideration 7: A CCP should regularly review and validate its margin system.

In addition to the back-testing exercises described above, NGX engages an external consultant to review the back-testing results on a quarterly basis which achieves two key objectives:

(i) ensuring that NGX's systems are calculating initial margin rates and product correlations as intended, in accordance with the model's specifications; and

(ii) assessing the sufficiency of the initial margin rates in effect during the prior quarter (including offsets permitted by correlations) as compared to actual price changes over that same period.

The results of the independent quarterly back-testing are reviewed and approved by the Manager, Risks Analytics, CRO and NGX President with copies provided to the ASC.

Principle 7: Liquidity Risk

An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.

Key Consideration 1: An FMI should have a robust framework to manage its liquidity risks from its participants, settlement banks, nostro agents, custodian banks, liquidity providers, and other entities.

NGX only accepts collateral in the form of cash or LC in either Canadian or US dollar denominations. Cash collateral must be unencumbered and is held in segregated accounts at NGX's settlement bank. LCs accepted by NGX are for a finite value with a next day payment drawdown and payment provision. Per the Collateral Agreement maintained between NGX and its settlement bank, NGX may only access or release Contracting Party collateral in accordance with the CPA or as otherwise agreed to by the Contracting Party. NGX does not re-invest Contracting Party collateral.

Because NGX accepts only cash and LC’s in Canadian or US dollar denominations which are not subject to mark to market changes, haircuts on cash or LC’s are not currently applied to collateral deposited with NGX. NGX's real time risk systems are presented as a Canadian dollar equivalent, and as such the prevailing daily USD-CAD foreign exchange rate is applied to collateral posted in US dollar denominations. If in the future NGX were to consider other forms of collateral, consideration would be given to the application of appropriate haircuts.

NGX maintains an updated record of the amount of collateral it holds, distributed by financial institution (cash collateral held at Toronto-Dominion Bank and letters of credit provided as collateral by all banks). NGX imposes issuing bank credit limits and concentration limits for LC’s and monitors this on a daily basis. Monthly exposure reports aggregating clearing and issuing bank exposures are provided to the Clearing Manager and CRO and RMC as deemed appropriate. Collateral balances are maintained in the Clearing System, both of which are updated daily upon receipt or return of collateral. All balances are approved by the Clearing Manager in line with NGX collateral and bank policies. Credit reviews of all issuing banks are performed at least annually.

NGX ensures that it meets the CFTC liquidity requirements for financial resources which include sufficient liquidity for the average daily settlements amounts.

Key Consideration 2: An FMI should have effective operational and analytical tools to identify, measure, and monitor its settlement and funding flows on an ongoing and timely basis, including its use of intraday liquidity.

	NGX has direct access to all settlement accounts through its settlement bank online banking platform. The accounts are monitored by the Settlements team on an ongoing basis ensuring account balances remain within acceptable limits for liquidity provisions. Settlement personnel have settlement reports available through the NGX Clearing system which provide them with all current and future settlement reports. In addition, NGX Finance, TMX Finance, and TMX Treasury personnel oversee NGX operational accounts to ensure sufficient operating liquidity.
Key Consideration 3: A payment system or SSS, including one employing a DNS mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or multiday settlement, of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme but plausible market conditions.	
	Not applicable, applies to FMI Payment System and Securities Settlement System classifications.
Key Consideration 4: A CCP should maintain sufficient liquid resources in all relevant currencies to settle securities-related payments, make required variation margin payments, and meet other payment obligations on time with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should consider maintaining additional liquidity resources sufficient to cover a wider range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would generate the largest aggregate payment obligation to the CCP in extreme but plausible market conditions.	
	NGX conducts stress testing using extreme but plausible scenarios on all settlement invoice payments that are subject to market volatility to ensure there are sufficient liquid resources available to resolve largest non-payment. With respect to physical products, NGX passes settlement payments for the notional value from the buyer to the seller for physical delivery. If the buyer doesn't provide a settlement payment on the appropriate settlement day NGX has access to a demand daylight borrowing facility of USD $300MM in order to facilitate payment to the seller. NGX may then collapse the collateral that is held on behalf of the defaulting buyer and use that collateral to repay the daylight borrowing facility. NGX monitors accumulated invoice amounts to ensure the largest non-payment could be resolved by the daylight borrowing facility. Repayment of the daylight facility must be made on the business day immediately following settlement day. To the extent a shortfall remains, NGX has access to an additional credit facility in the amount of USD$20MM along with NGX equity and cash reserves to facilitate repayment of the daylight facility. NGX does not consider the current product offering to contain items with complex risk profiles other than a small amount of financial gas options which are not correlated with Contracting Party defaults. NGX does not believe it is systemically important in any jurisdiction.

Key Consideration 5: For the purpose of meeting its minimum liquid resource requirement, an FMI's qualifying liquid resources in each currency include cash at the central bank of issue and at creditworthy commercial banks, committed lines of credit, committed foreign exchange swaps, and committed repos, as well as highly marketable collateral held in custody and investments that are readily available and convertible into cash with prearranged and highly reliable funding arrangements, even in extreme but plausible market conditions. If an FMI has access to routine credit at the central bank of issue, the FMI may count such access as part of the minimum requirement to the extent it has collateral that is eligible for pledging to (or for conducting other appropriate forms of transactions with) the relevant central bank. All such resources should be available when needed.	
	NGX's customer cash collateral, short-term credit facilities issued through NGX's settlement bank, and NGX's cash balance are all available same day for liquidity purposes. NGX holds a cash balance in the respective currency to ensure same day settlement of invoice payments even if non-payment of largest daily invoice related to market volatility. NGX has a USD $3000MM demand daylight revolving credit facility through its settlement bank for physical settlement day liquidity purposes. This amount more than exceeds the value of the largest physical invoice non-payment. In addition, NGX has a USD $20MM demand revolving credit facility to aid in managing delays in resolution of settlement shortfalls. These short-term borrowing facilities are not committed facilities and are available immediately when required. Customer collateral may also be used to resolve non-payments. Cash collateral meets the same-day requirement for resolving non-payments. LC's contain provisions such that upon receipt of a drawdown notification, cash must be provided to NGX by next or second business day. As such, LC collateral is not counted towards NGX's qualifying liquid resources.
Key Consideration 6: An FMI may supplement its qualifying liquid resources with other forms of liquid resources. If the FMI does so, then these liquid resources should be in the form of assets that are likely to be saleable or acceptable as collateral for lines of credit, swaps, or repos on an ad hoc basis following a default, even if this cannot be reliably prearranged or guaranteed in extreme market conditions. Even if an FMI does not have access to routine central bank credit, it should still take account of what collateral is typically accepted by the relevant central bank, as such assets may be more likely to be liquid in stressed circumstances. An FMI should not assume the availability of emergency central bank credit as a part of its liquidity plan.	
	Supplemental liquid resources include customer collateral in the form of LCs and NGX's self-funded Guarantee Fund of USD $100MM. LC's are available to NGX within 1-2 business days. The Guarantee Fund is comprised of a letter of credit issued by NGX's settlement bank held in trust by Bank of New York Mellon. Upon execution of the CPA, a Contracting Party becomes a member to the Deposit Agreement which contains provisions related to the escrow services and drawdown provisions in the event of default by NGX. The Guarantee Fund is supported by a TMX parental guarantee issued to NGX's settlement bank and further backed by default insurance in the same amount provided by Export Development Canada ("EDC"). These additional resources may be used to resolve any potential collateral shortfall that may occur in a Contracting Party default

	scenario. NGX ensures that it meets the CFTC liquidity requirements for financial resources.
Key Consideration 7: An FMI should obtain a high degree of confidence, through rigorous due diligence, that each provider of its minimum required qualifying liquid resources, whether a participant of the FMI or an external party, has sufficient information to understand and to manage its associated liquidity risks, and that it has the capacity to perform as required under its commitment. Where relevant to assessing a liquidity provider's performance reliability with respect to a particular currency, a liquidity provider's potential access to credit from the central bank of issue may be taken into account. An FMI should regularly test its procedures for accessing its liquid resources at a liquidity provider.	
	As a fully collateralized exchange, NGX's settlement bank and LC issuing banks can be considered the main liquidity providers. NGX reviews both their settlement bank and collateral issuing banks on a regular basis to provide assurance of liquidity performance both for credit facilities and collateral deposits. In the event that NGX's primary settlement bank is not available, NGX has an agreement with another Canadian Schedule I Bank to provide settlement facilities.
Key Consideration 8: An FMI with access to central bank accounts, payment services, or securities services should use these services, where practical, to enhance its management of liquidity risk.	
	NGX's does not currently use a central bank to manage these items as it believes these are adequately met through its current settlement bank. In addition, NGX has a service agreement in place with another Canadian Schedule I Bank to provide banking and settlement services in the event that NGX's primary settlement bank is unavailable. NGX has direct access to Contracting Party collateral accounts held at the settlement bank and is able to initiate and authorize transfers between corporate controlled accounts and collateral accounts providing conditions specified under the CPA have met this. NGX uses online access and direct correspondence with the settlement bank to access accounts, payment services and securities services with the settlement bank. No other services are currently employed by NGX with its settlement bank. NGX's parent organization use services provided by banks other than our settlement bank. Services, rates, and procedures are reviewed and compared on a regular basis. Changes are made as and when deemed beneficial to the organization. No such changes have been identified as necessary.
Key Consideration 9: An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme but plausible market conditions. Scenarios should also take into account the design and operation of the FMI, include all entities that might pose	

material liquidity risks to the FMI (such as settlement banks, nostro agents, custodian banks, liquidity providers, and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should document its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.	
	NGX conducts stress testing using extreme but plausible scenarios on all settlement invoice payments that are subject to market volatility to ensure there are sufficient liquid resources available to resolve the largest non-payment. Since invoice payments are directly related to commodity price risk, scenarios are developed to capture various levels of market volatility to understand the sensitivity to scenario utilized. The extreme but plausible scenario used to determine largest invoice non-payment is a 97% price move which is consistent with Bank of Canada guidance. This scenario also assumes the same customer defaults on invoice payment on two sequential days. Additional scenarios are run for sensitivity and include 10% and 25% parallel forward price curve shifts, 99.7% and 99.9% confidence interval price moves and 1, 2 and 5 day invoice payment non-performance. Liquidity stress testing is preformed daily and results are reviewed by the Manager, Risk Analytics, Clearing Manager, and Chief Risk Officer. The stress testing methodology is recalibrated monthly for adequacy.
Key Consideration 10: An FMI should establish explicit rules and procedures that enable the FMI to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the FMI's process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.	
	The CPA clearly outlines Contracting Party payment obligations and NGX recourse in the event of failure to provide payment when due. NGX's qualifying resources are available immediately to resolve same-day settlement non-payment. If a non-payment of an invoice occurred, NGX would have immediate access to the USD $300MM demand daylight revolving credit facility from its settlement bank as a short-term source of liquidity. Per the conditions of the CPA, failure to pay constitutes a default by a Contracting Party whereby NGX could invoke its liquidation rights and collapse the defaulting party's collateral to recover the invoice payment and repay NGX's settlement bank. NGX maintains a Financial Recovery and Wind-Down Plan which addresses any credit losses it may face as a result of any individual or combined default among its participants and how uncovered credit losses would be allocated. The Financial Recovery and Wind-Down Plan also includes the process to replenish any financial resources that NGX may employ during a stress event. Replenishment of any of these liquid financial resources may be through supplemental liquid resources held at NGX or funds raised through the parent organization. Current NGX excess cash reserves would be sufficient to ensure ongoing availability of sufficient liquid resources.

Principle 8: Settlement Finality

An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.

Key Consideration 1: An FMI's rules and procedures should clearly define the point at which settlement is final.

Payments or receipts by the Contracting Party as a result of transactions cleared through NGX are due in accordance with the CPA and respective settlement dates. Settlements are deemed final upon remittance to NGX and constitute full satisfaction of the payment or receipt obligations. The CPA, as supplemented by Canadian bankruptcy and insolvency laws, provides for the intended discharges to satisfy settlement finality. NGX has obtained legal opinions supporting this view that provide NGX with a high degree of certainty that settlement payments are final once received and applied.

As a standalone FMI, NGX does not have linkages to any other FMI.

Key Consideration 2: An FMI should complete final settlement no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.

The NGX settlement team manages payments on all settlement dates which are posted on the NGX website. In the event NGX is required to defer a settlement date, Contracting Parties are notified immediately. To date NGX has not experienced an event that would cause a deferral of final settlement.

NGX effects daily settlements with Contracting Parties for financially-settled Canadian electricity contracts only. For all other cleared transactions, settlement occurs on a monthly basis. Settlement invoices are provided in advance of the settlement date and are for confirmed amounts that are not subject to additional market based evaluations. All invoices are available through the NGX online reporting portal.

Settlement payments are processed intraday and reconciled at the end of the day to identify any outstanding payments. All payments are considered final when effected. NGX's rules state that invoices are final and binding 120 days after settlement, provided a Contracting Party has not disputed such invoice. Settlement values are fully collateralized and as such when they are not received NGX reserves the right to use customer collateral to cure the outstanding payment. Contracting Parties are advised of these requirements through the CPA as well as payment dates listed on NGX's website.

Key Consideration 3: An FMI should clearly define the point after which unsettled payments, transfer

instructions, or other obligations may not be revoked by a participant.	
	The CPA states that all payments are considered final when affected and as such, Contracting Parties must meet all their payment obligations. Subsequently, NGX considers payment final upon receipt of funds. Should a payment be delayed, the responsible Contracting Party is notified of the default which requires resolution immediately. The Clearing team, Clearing Manager and CRO are notified of all non-payments and adjustments are made to the Clearing system to capture the non-payment. NGX must notify its regulators of all material defaults including failure to pay if not remedied within two business days. Should a Contracting Party be unwilling or unable to resolve the default, NGX may use collateral to cure the non-payment and invoke its liquidation rights if required.

Principle 9: Money Settlements An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.	
Key Consideration 1: An FMI should conduct its money settlements in central bank money, where practical and available, to avoid credit and liquidity risks.	
	NGX uses a Canadian Schedule I commercial bank as its sole settling bank to conduct all settlements in both Canadian and US nominations. NGX's does not currently use a central bank to manage these items as it believes these are adequately met through its current settlement bank. In the event that NGX's primary settlement bank is not available, NGX has an agreement with another Canadian Schedule I commercial bank to provide banking and settlement facilities.
Key Consideration 2: If central bank money is not used, an FMI should conduct its money settlements using a settlement asset with little or no credit or liquidity risk.	
	NGX's settlement bank is a Canadian Schedule I Commercial bank upon which NGX performs regular credit reviews and monitors the CRA ratings of its settlement bank on an ongoing basis. Factors considered during the credit reviews include CRA ratings, bank organizational structure, financial ratios, cost of settlement transactions, availability of online and manual tools, and availability of dedicated staff.
Key Consideration 3: If an FMI settles in commercial bank money, it should monitor, manage, and limit its credit and liquidity risks arising from the commercial settlement banks. In particular, an FMI should establish and monitor adherence to strict criteria for its settlement banks that take account of, among other things, their regulation and supervision, creditworthiness, capitalisation, access to liquidity, and operational reliability. An FMI should also monitor and manage the concentration of credit and liquidity exposures to its commercial settlement banks.	
	NGX performs a regular credit review of its settlement bank and monitors credit and bank concentration limits in order to ensure maintenance of adequate credit and liquidity. Additionally,

	NGX maintains a subscription to Standard & Poor's Ratings Direct service to monitor changes to credit ratings and outlooks on its settlement bank. Clearing staff automatically receive email alerts when a change in rating or outlook occurs. In addition, NGX monitors its settlement bank's regulatory filings and provides a monthly exposure report to the CRO.
Key Consideration 4: If an FMI conducts money settlements on its own books, it should minimise and strictly control its credit and liquidity risks.	
	NGX acts as an intermediary between buyers and sellers and does not take market positions. As such, NGX does not conduct settlements on its own book.
Key Consideration 5: An FMI's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, at a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.	
	The Credit Agreement between NGX and its settlement bank contain provisions for when fund transfers will occur. Contracting Parties are advised of these requirements through the CPA as well as public disclosure of settlement dates. NGX uses the LVTS wire transfer system which ensures that wire transfers are final. Funds are transferred throughout the business day and are effected when received. NGX Settlement personnel monitor settlement account for incoming and outgoing wire payments on an ongoing basis to ensure settlements are effected as intended.

Principle 10: Physical Deliveries An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.	
Key Consideration 1: An FMI's rules should clearly state its obligations with respect to the delivery of physical instruments or commodities.	
	NGX clears energy commodity futures for physical delivery at over 75 physical locations across North America. All physical delivery obligations are outlined in the CPA and all Contracting Parties agree to these obligations before entering to transactions. Contracting Parties must provide valid pipeline account information in order to confirm their ability to physically delivery and receive products. Operations and Marketing teams work with customers on an ongoing basis to ensure their awareness and understanding of delivery obligations. NGX provides web based reports to all participants with nominations and scheduling tools through the online reporting portal.
Key Consideration 2: An FMI should identify, monitor, and manage the risks and costs associated with the storage and delivery of physical instruments or commodities.	
	NGX provides a 'handshake' title transfer at all of our locations. NGX provides assurance to

	Contracting Parties that it will either deliver or pay costs of failing to deliver the product contracted for. NGX has Operations personnel in both its Calgary and Houston offices who carry out specific responsibilities including nominating physical deliveries and ensuring those deliveries are effected in a timely manner and for the volumes expected. For each physical natural gas delivery point that NGX clears, Operations personnel will submit a nomination at least once per day. NGX clearing members are expected to accept those nominations (for certain locations, having a waiver in place is required), and a failure to either make or take delivery is considered a default under the CPA. In the event a Contracting Party fails to make or take delivery NGX maintains physical backstopping agreements that Operations personnel can rely upon to rectify imbalances in clearing member deliveries. NGX has backstopping provisions for physical product and when delivery obligations are not met, all associated costs of remedying the default are passed on to the defaulting party as outlined in the CPA. In the event that physical gas cannot be backstopped, the CPA outlines contingencies where the failing counterparty is charged market price for the failed delivery. Contracting Parties are matched anonymously on trading markets via the online WebICE trading platform, or via the OTC tool. All rules and legal obligations are clearly expressed in the NGX CPA. NGX offers multiple trading options on WebICE, allowing clients to modify positions via trading with as much flexibility as possible. All Contracting Parties must follow the same delivery procedures as outlined in the CPA (cannot customize to their own preferences), but NGX has some tools to track nomination accounts, etc. NGX Operations staff engages with clients and pipeline operators on a consistent basis to ensure reliable physical delivery. The majority of locations are nominated at the first NAESB cycle (one day prior to delivery) to ensure time for alternate measures if necessary.

Principle 11: Central Securities Depositories

A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry.

NOT APPLICABLE, APPLIES TO FMI CENTRAL SECURITIES DEPOSITORY CLASSIFICATION

Principle 12: Exchange-of-Value Settlement Systems

If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.

Key Consideration 1: An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs.

For tracking purposes NGX calculates Contracting Parties' margin requirements (which include net accounts receivable, initial margin and variation margin) as a Canadian-dollar equivalent. NGX products are transacted in Canadian dollar and US dollar currencies, therefore a customer may have invoices in multiple currencies. NGX settles Canadian-dollar and US-dollar denominated invoices with each Contracting Party, separately, on a net basis unless the Contracting Party has specifically asked to be invoiced in a different manner (e.g. separate invoices for physical natural gas and physical crude oil). When NGX is expecting to receive payment from a Contracting Party in one currency and making payment in the other currency, NGX will not release its payment until funds have been received from the Contracting Party as outlined in the CPA. Exceptions are made if NGX has sufficient collateral on hand from the Contracting Party to facilitate payment.

NGX does not have linked obligations for settlement. The NGX settlement team works to ensure that payment has been received prior to releasing any payments.

Principle 13: Participant-Default Rules and Procedures

An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.

Key Consideration 1: An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.

Events of default are clearly outlined in the CPA that is publicly available through NGX's website. An event of default occurs if a Contracting Party or affiliate is responsible for a Failure to Deliver, Failure to Pay, Failure to Take, Event of Default, Failure to Provide Eligible Collateral Support, Financially Settled Futures Party's Default or Option Party's Default. An "Event of Default" in respect of the Contracting Party will be deemed to occur on the occurrence and continuation of the following events: a credit support default, misrepresentation of credit support documents by the Contracting Party, Bankruptcy, or a merger that results in the surviving entity failing to assume all NGX obligations. Option Party's Default" means the occurrence of a material breach of representation or warranty made by a Contracting Party or a failure to perform its obligations

	under an option transaction. "Financially Settled Futures Party's Default" means the occurrence of a material breach of a representation or warranty in the CPA or a failure to perform transactional obligations. Upon occurrence of a default, NGX will notify the defaulting party immediately and the NGX management team will determine the best recourse to address the default. As per the terms of the CPA, NGX may exercise any or all of the following rights: (a) request additional collateral; (b) suspend the Contracting Party; (c) declare any amounts for oil or gas delivered or any unpaid invoices immediately due and payable and withhold payments due as if paid; (d) suspend deliveries of oil or take oil from the Contracting Party by amending the applicable notices for shipment, reallocating volumes or otherwise; (e) offset any deliveries or takes of oil under the CPA; (f) terminate any transaction or declare it immediately payable or to be performed (g) liquidate the Contracting Party's portfolio with NGX. If a liquidation strategy is selected, any posted collateral will be collapsed, all current positions of the Contracting Party will be settled and any existing forward position transactions will be auctioned at the discretion of NGX. Any and all auctions will be structured upon prevailing market positions as to limit potential market price distortions. All obligations and costs arising from these actions will be cured through the defaulting party's collateral. Following the event of liquidation the defaulting party may be terminated from the Exchange. The Exchange may enter into physically settled futures transactions to set-off, in whole or in part, the obligations of the Contracting Party under physically settled futures transactions. Upon any failure by a Contracting Party to provide the required amount of collateral, NGX may cause a Contracting Party suspension, effect a close-out procedure, and/or initiate liquidation procedures. The rights of NGX are outline in the CPA. Certain additional actions can be taken in response to certain types of default at NGX's discretion. NGX has delivery insurance in the amount of CAD $100MM in place to protect positions relating to certain physical products. Additionally NGX has in place a USD $300MM demand daylight revolving credit facility to cover settlement non-payment amount, financial resources to cover the single largest potential collateral shortfall in an extreme stress event plus 12 months of operating costs, and a USD $100MM Guarantee Fund.
Key Consideration 2: An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.	
	NGX has clearly defined procedures including roles and responsibilities for defaults, including tasks for the Clearing, Marketing, Operations, Legal departments as well as NGX Management. This is documented in the NGX Clearing and Settlement Procedures and is reviewed on an ongoing basis by all departments as well as NGX management. The default discovery, notification and liquidation processes are simulated at least once annually and upon completion a report is delivered to NGX management indicating the results and any recommendations for changes to default processes based on the simulation results.

	NGX has policies and procedures in place guiding when relevant stakeholders must be contacted in an event of default. Key stakeholder contacts are contacted via email by the appropriate NGX contact who can address the issue. Communication of default notices to the defaulting party and all relevant stakeholders including regulators, NGX Risk Management Committee and Board of Directors are conducted through various modes including email, fax, phone and courier as required.
Key Consideration 3: An FMI should publicly disclose key aspects of its default rules and procedures.	
	The CPA is publicly available on the NGX website under Contracting Party Resources and outlines Recourse and Liability obligations of both a Contracting Party and NGX Internal processes and procedural documents outline the roles, responsibilities and processes in the event of a default. Upon the default of a Contracting Party, NGX will notify the defaulting party and will begin remedial actions to rectify the default. Recourse of the Contracting Party in respect of any default is solely against NGX, due to the non-mutualized structure. Notifications of the default are limited to the defaulting party and NGX. The Contracting Party is entitled to the rights of recourse against NGX set forth under the CPA in the event of any Failure to Deliver, Failure to Pay or Failure to Take by NGX.
Key Consideration 4: An FMI should involve its participants and other stakeholders in the testing and review of the FMI's default procedures, including any close-out procedures. Such testing and review should be conducted at least annually or following material changes to the rules and procedures to ensure that they are practical and effective.	
	The Clearing team regularly engages with Contracting Parties to review the liquidation process. Internal liquidation simulations are performed at least once annually using various default triggers and portfolios. A summary of each completed simulation exercise is presented to NGX management, indicating all findings and highlighting any changes for review and approval. Due to NGX's direct cleared, non-mutualized structure Contracting Parties are not exposed to defaults by another Contracting Party. As such NGX conducts all liquidation simulation events without participation by Contracting Parties.

Principle 14: Segregation and Portability

A CCP should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to the CCP with respect to those positions.

Key Consideration 1: A CCP should, at a minimum, have segregation and portability arrangements that effectively protect a participant's customers' positions and related collateral from the default or insolvency of that participant. If the CCP additionally offers protection of such customer positions and

collateral against the concurrent default of the participant and a fellow customer, the CCP should take steps to ensure that such protection is effective.	
	Each Contracting Party self clears through NGX's non-mutualized direct cleared model. Contracting Parties do not have clearing customers. Accordingly, Contracting Parties are not exposed to another Contracting Party's default and are insulated from a participant or fellow customer default. Collateral posted by Contracting Parties is only eligible to support their obligations making all transactions insulated from another customer default and resulting in no cross exposure. NGX deposits all cash collateral in segregated interest bearing bank accounts separate from the corporate funds of NGX or that of any affiliates or subsidiaries of NGX. NGX keeps all such collateral in trust and holds all of such amounts as trustee. In addition, segregated daily settlement accounts are created for participants in Financial Canadian Power products which settle on a daily basis. As noted above, there is no customer clearing on NGX. If at any time an NGX Participant requests to clear on anything other than a self-cleared basis, NGX would make the necessary adjustments to accommodate customer clearing, including a full legal assessment of the segregation and portability of customer funds under the relevant jurisdictions.
Key Consideration 2: A CCP should employ an account structure that enables it readily to identify positions of a participant's customers and to segregate related collateral. A CCP should maintain customer positions and collateral in individual customer accounts or in omnibus customer accounts.	
	While NGX allows for intermediated trading and clearing, to date all Contracting Parties self-clear for their own accounts. Contracting Parties have access to the NGX online reporting portal that includes a suite of position and collateral reports. In addition, NGX provides direct view only access to its settlement bank online reports to confirm cash collateral balances. In the event that a Contracting Party had customer positions, the existing reports are flexible enough to produce such views.
Key Consideration 3: A CCP should structure its portability arrangements in a way that makes it highly likely that the positions and collateral of a defaulting participant's customers will be transferred to one or more other participants.	
	While NGX allows for intermediated trading and clearing, to date all Contracting Parties self-clear for their own accounts. All portability arrangements are outlined in the CPA.
Key Consideration 4: A CCP should disclose its rules, policies, and procedures relating to the segregation and portability of a participant's customers' positions and related collateral. In particular, the CCP should disclose whether customer collateral is protected on an individual or omnibus basis. In addition, a CCP should disclose any constraints, such as legal or operational constraints, that may impair its ability to segregate or port a participant's customers' positions and related collateral.	
	While NGX allows for intermediated trading and clearing, to date all Contracting Parties self-clear for their own accounts and maintain access to their collateral as well as reports on their accounts. All segregation and portability provisions are outlined in the CPA.

Principle 15: General Business Risk

An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.

Key Consideration 1: An FMI should have robust management and control systems to identify, monitor, and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.

NGX's risk management framework addresses risks arising from general business including financial and operational risks. NGX identifies and measures risks arising from poor execution of business strategy, negative cash flows, and unexpected large operating expenses. General business risks are monitored on an ongoing basis through weekly Senior Leadership meetings, monthly financial reporting, and ongoing review of management reporting. Formal measurement occurs on a monthly and quarterly basis and as required if a material change to inputs occurs.

Key Consideration 2: An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves, or other retained earnings) so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.

NGX holds sufficient liquid resources to withstand the risk of loss funded by equity such that it can continue to operate even if it incurs general business losses, based on its business risk profile.

NGX complies with Financial Resource requirements as reflected in Part 39 of the CFTC DCO rules. These include effectively measuring, monitoring, and managing liquidity risks, maintaining sufficient liquid resources such that it can, at a minimum, fulfill its cash obligations when due. NGX calculates liquid net assets as Cash less the average daily pay by Contracting Parties for the past quarter. Liquid net assets are compared against 6 months of forecasted operating expenses to ensure that operations would be sustainable for this period.

Key Consideration 3: An FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. At a minimum, an FMI should hold liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover participant defaults or other risks covered under the financial resources principles. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.

NGX maintains a Financial Recovery and Wind-down Plan and holds sufficient liquid net assets to implement this plan. In addition to the resources held for participant defaults, liquid assets in the

	form of cash are held sufficient to cover 12 months of operating costs as required under CFTC financial resource requirements.
Key Consideration 4: Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.	
	The liquid net assets funded by equity are in the form of cash, meeting the criteria of sufficient quality and liquidity. NGX conducts operational cash flow stress testing for scenarios that could negatively impact operational cash flow and liquidity of the business. Results of the stressed scenarios are compared against NGX's existing covenants & regulatory requirements to ensure the business could withstand all stress scenarios and continue meet all obligations. General business stress testing is currently carried out under the following scenarios: • 10%, 20% & 30% reduction in cash balances to simulate operational losses or other extenuating circumstances • Foreign exchange (CAD – USD) change based on an extreme unfavorable change in the foreign exchange rate as well as an increase in the proportion of US currency held to further exaggerate the effect. • Loss of the largest customer which could reduce NGX revenue by an amount equivalent to the funds received from NGX's largest client. • Failure of the largest current project resulting in increased operating expenses equal to the capitalized portion of the largest capital project currently underway. As mentioned above, results from all scenarios are subjected to existing financial resource testing to ensure compliance is maintained. General business cash flow stress testing is conducted quarterly in the absence of any material change to NGX's liquid net assets or potential operating losses.
Key Consideration 5: An FMI should maintain a viable plan for raising additional equity should its equity fall close to or below the amount needed. This plan should be approved by the board of directors and updated regularly.	
	In the event that financial resources were inadequate NGX's parent company may, at its sole direction, provide additional capital to restore financial resources to adequate levels. Any such request would be assessed at the time of request taking into all relevant information in making a determination. The plan to raise additional equity at the TMX level is updated annually based on the TMX Group Limited Capital Plan which reviews the overall cost of capital within TMX. This plan is done concurrently with the business plan and presented for approval to the TMX Board.

Principle 16: Custody and Investment Risks

An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.

Key Consideration 1: An FMI should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures, and internal controls that fully protect these assets.

All collateral assets are warehoused at TD Bank, a Canadian Schedule I Commercial Bank. TD Bank is subject to significant regulation and capital requirements as a Chartered Bank under the Bank Act (Canada). To maintain compliance with the bank regulations, TD Bank must adhere to robust practices and have in place appropriate practices, procedures and internal controls. NGX performs a regular credit review of its bank and monitors credit and bank concentration limits in addition to monitoring CRA rating alerts received when a change in rating or outlook occurs. NGX also monitors its settlement bank's regulatory filings and, in conjunction with TD Bank, conducts monthly audits of all collateral records and completes regular reviews of procedures for collateral movements.

Key Consideration 2: An FMI should have prompt access to its assets and the assets provided by participants, when required.

NGX has executed agreements between itself and TD Bank regarding the ownership of and access to customer collateral. The agreements are reviewed on a regular basis and any changes are reviewed by both internal and external legal counsel as well as legal counsel of the bank at which assets are held in custody. Cash assets are held in premium business savings accounts which are sufficiently liquid accounts to ensure prompt access. NGX maintains a first priority security interest over certain assets of its Contracting Parties and following perfection of its security, may enforce its rights through these interests. LCs are warehoused at TD Bank Trade Finance offices in Calgary, Alberta and supported with additional services through Trade Finance operations located in Montreal, Quebec. NGX maintains relationships across both locations facilitating quick access to collateral funds.

Key Consideration 3: An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.

NGX currently relies on one custodian bank. A Credit Agreement and Bank Collateral Agreement are in place with the custodian bank which clearly defines responsibilities of NGX and the custodian bank and enables NGX to fully understand exposures and relationships. Some concentration in risk exists due having a single custodian bank. Monthly exposure reports that includes participant exposures, collateral balances, and credit facility usage are completed by the Clearing team and provided to the Clearing Manager and CRO. Activities with another settlement bank would have similar reporting measures as appropriate.

Key Consideration 4: An FMI's investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for quick liquidation with little, if any, adverse price effect.

Cash collateral funds are deposited into segregated secure premium business savings accounts with the custodian bank and are not reinvested. Investment strategy for Contracting Party funds is defined in the CPA. Interest is earned on cash collateral at an interest rate as notified by NGX and any interest earned in excess of the rates is deducted monthly by NGX.

NGX follows similar investment practices with the organization's own funds. Aside from investment of liquid assets in overnight money market accounts, the only investment reflected on NGX's balance sheet is an investment in an affiliate organization. This investment was funded via an intercompany term loan as part of a corporate debt structuring arrangement.

Principle 17: Operational Risk

A CCP should cover its credit exposures to its participants for all products through an effective margin system that is risk-based and regularly reviewed.

Key Consideration 1: An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures, and controls to identify, monitor, and manage operational risks.

NGX's operational risk is managed through policies embedded with the ERM Program and internal procedures which include a Business Continuity Plan ("BCP") and Disaster Recovery Plan ("DRP").

NGX has three primary sources of operational risk:

1. **Financial and liquidity risks** which are mitigated through a conservative margining regime, NGX's liquid financial resources and banking facilities;
2. **Physical delivery risks** which are mitigated through daily and monthly pipeline nominations and physical backstopping arrangements; and
3. **Systems-related risks** which NGX manages on an ongoing basis though several mechanisms, including running redundant production servers (certain of which have built-in automatic failover protection), daily and weekly backups, and the DRP.

Technical risks are identified and managed using the DRP. NGX relies on systems held in two separate data centers being available at all times. These resources ensure transactional data and market price information continue to be processed so that physical deliveries and margining and settlement obligations are not interrupted. In addition, NGX maintains systems development life cycle documentation and an IT Change Management Policy ("CMP"). The CMP describes the milestones for IT development and testing, including functionality, capacity and security testing,

	and the processes and authorizations required each time NGX upgrades its systems, authorizes a change to employee access or requires a change to one of its production databases. NGX's BCP and DRP consider these sources of risk collectively to ensure that necessary exchange and clearinghouse functions continue upon activation of either the BCP or DRP.
Key Consideration 2: An FMI's board of directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI's operational risk-management framework. Systems, operational policies, procedures, and controls should be reviewed, audited, and tested periodically and after significant changes.	
	NGX has developed a risk framework and governance structure as outlined in Section B - General Organization of the FMI of this document. The risk framework includes an Operational Risk Policy as well as Information Technology (IT) Systems/Services Risk Management Policy. The Board must: a. Review and approve management's strategic and operational plans and related objectives to ensure they are consistent with the corporate vision. b. Confirm that a management system is in place to identify the principal risks to the Corporation and its business and that appropriate procedures are in place to monitor and mitigate those risks. c. Establish a risk-management framework including the Corporation's risk tolerance policy, assigning responsibilities and accountability for risk decisions and addressing decision making in crises and emergencies. d. Review and approve material decisions that may have a significant impact on the risk profile of the Corporation such as the limits for total credit exposure, large individual credit exposures, introduction of new products, implementation of new links, use of new crisis-management frameworks, adoption of processes and templates for reporting significant risk exposures and adoption of processes for considering adherence to relevant market protocols. e. Establish processes to ensure that the Corporation's design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its stakeholders and also identify and appropriately manage the diversity of stakeholder views and any conflicts of interest between stakeholders and the Corporation. f. Ensure consideration of financial stability and other relevant public interests in decision making process. g. Confirm that management processes are in place to address and comply with applicable regulatory, corporate and other compliance matters. h. Confirm that processes are in place to comply with the Corporation's by-laws, Board Code of Conduct and Employee Code of Conduct ("Codes of Conduct"), all recognition orders, recognition decisions, exemption orders, approvals, directives and other requirements issued or imposed with respect of the Corporation by applicable regulatory authorities, and all other significant policies and procedures. i. Review management's internal risk management and compliance reports.

j. Confirm that processes and structures are in place to ensure the safety and efficiency of the services provided by the Corporation and to ensure that the risks posed by the services provided by the Corporation are identified and understood by management and the Board.
k. Develop and maintain an appropriate risk culture at all levels within the Corporation.

NGX operations including systems and procedures are subject to an internal and external audit on an annual basis, ongoing security reviews performed by TMX, and an annual financial audit conducted by a national accounting firm. Results of the audits are reviewed by the NGX management team and results provided to the RAC, NGX Board and NGX's regulators.

NGX may be audited by its regulators at their discretion, the results are publicly available through the respective regulator's website. In addition, NGX undertakes a tri-annual clearinghouse audit preformed by a third party audit firm. These results are provided to NGX's regulators and may be made available through the regulators websites.

Key Consideration 3: An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.

NGX has an operational system uptime objective of 99.995% including the ongoing calculations of indices. These objectives are taken into consideration when making decisions on systems and through the strategic planning process.

NGX is reliant on ICE's transactional platform reliability in order to receive trades in real time. This influences the operational risk management strategy as limited trades feeds may prevent effective position monitoring and margining. In the event ICE connectivity between ICE and NGX is interrupted, NGX has discretion to close markets on ICE until functionality is restored. NGX has the ability to manually enter trades directly into the clearing system platform if required. Where available, NGX's Marketing team may provide limited brokering activity to match buyers and sellers when the electronic platform is unavailable. There are redundant technical fail safes in place to ensure connectivity remains at all times and NGX's Operations, IT and Market Surveillance teams continuously monitor market availability and activity to ensure the clearing system remains current.

Key Consideration 4: An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.

The clearing system is stress tested with every major release to ensure transaction processing is not negatively impacted. In addition, NGX performs load and stress testing on a regular basis results of which are reviewed by the NGX Management team which includes the Vice President, Information Technology and CRO. In addition, NGX monitors capacity with each major software upgrade or market addition. If an approaching capacity limit is forecasted recommendations are presented to the NGX management team for approval and implemented accordingly.

Key Consideration 5: An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.

	The policies and procedures, including CMP and project management procedures for addressing the plausible sources of physical vulnerabilities and threats on an ongoing basis are found within the TMX Security Policy. NGX policies, processes, controls and testing appropriately take into consideration relevant international, national and industry-level standards for physical security. TMX has issued specific protocols regarding office security including policies regarding access cards and evacuation procedures. The physical security policies and procedures are operated by TMX Security and include the requirement of an authorization card to enter any NGX/TMX premises including stairwells, washrooms, and offices. After hour access to building floors requires authorization cards for elevator use as well. Additionally TMX encourages employee awareness regarding protocols and safety measures. Electronic security is co-managed by TMX and NGX and uses standard SSL based encryption which requires a password to access all systems and require password changes every 90 days.
Key Consideration 6: An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to enable the FMI to complete settlement by the end of the day of the disruption, even in case of extreme circumstances. The FMI should regularly test these arrangements.	
	NGX's BCP contains directions for NGX to effectively respond to a disruptive incident in order to protect personnel and resources minimizing disruption to critical business services. Business recovery objectives maintain a level of service that will protect NGX's relationship with staff, participants, regulators, vendors and other entities and uphold NGX's reputation. The BCP identifies the steps necessary to achieve one or more of the following strategies: 1. Relocate personnel to an alternate recovery site; 2. Transfer work / processing responsibility to another geographic location; 3. Use manual procedures until systems are restored (if disabled); 4. Identify and recreate Work-In-Progress lost during the event and re-enter it in an efficient manner; and/or 5. Address backlogged work created by task prioritization. The BCP address potential points of failure relating to key staff, facilities, information systems, external service providers and vital records by identifying effective recovery strategies and solutions for actual failure and by documenting in a prescribed format the resources and actions required. The BCP consists of six stages in the standard recovery process described below. • **Stage 1 - Immediate Response -** encompasses immediate response actions to address safety, emergency notification, damage assessment, and relocation logistics. It contains usage guidelines and general information for Business Units in the event of disaster.

- **Stage 2 – Arrival and Set-up at the Alternate Recovery Facility -** focuses on performing any manual processes in advance of system restoration. This includes retrieval of salvaged items from the damaged site as required.
- **Stage 3 – Prepare for Critical Processing –** requires the BCP teams to verify the functionality of the restored systems and restore deferred or lost work.
- **Stage 4 – Resume Critical Processing (Business Resumption) -** requires the BCP teams to resume critical business processes and begin regular reporting to the CMT on the progress of their recovery.
- **Stage 5 – Migrate to Interim Site -** In the event of a long-term outage (e.g., greater than six weeks), it may be necessary to move from the alternate site(s) to an interim location while the home site is repaired/reconstructed.
- **Stage 6 - Return to Home Site -** Once the damaged site has been repaired, reconstructed, or a new location has been selected and prepared, the affected business units will return to their home/permanent office location.

In addition, the DRP has recovery times for different scenarios. All recovery times are designed to be able to meet end of the day events. NGX has two separated data centers that are more than 20k apart. Critical trade data is replicated in real time between both data centers.

The BCP and DRP are reviewed and tested on an annual basis. However, most BCP functions (remote connection, data centers, etc.) are used more often in the regular course of business. Testing includes NGX, the offsite data centers, and some required vendors/pipeline operators. NGX takes steps to ensure that a failover between sites is as transparent as possible to Contracting Parties. No changes are required to Contracting Parties' networks or configurations.

Key Consideration 7: An FMI should identify, monitor, and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor, and manage the risks its operations might pose to other FMIs.

NGX has outsourced hosting of it data centers to a third party which goes through a rigorous audit process and meets high level industry standards.

Settlement banks services are generally accessed through online portals. In the event of a bank system failure back up manual process are in place. These processes are tested regularly the results of which are provided to the CRO. Should NGX's primary settlement bank become unavailable, NGX has arrangements with an alternative settlement bank to facilitate banking and settlement services.

NGX monitors a number of connections in real time related to its platform sharing agreement with ICE. In the event of a system disruption related to ICE, NGX's IT department immediately notifies ICE and works with ICE to rectify any issues as appropriate. NGX's participants do not provide any third party services or utilities.

	NGX does not have any links to any other FMI or CCP.

Principle 18: Access and Participation Requirements

An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access

Key Consideration 1: An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.

Prior to becoming a Contracting Party, an applicant must submit a completed application form, which requests various information about a company, its affiliates (if applicable), a list of the officers, directors, principals and significant shareholders, past Contracting Party status, a list of the regulatory authorities which have authority with respect to the applicant, and past or current disciplinary action imposed on the applicant or certain of its representatives by regulatory authorities.

An applicant must also satisfy the Minimum Qualification Requirement, that is, the applicant must be a business entity with a net worth exceeding $5MM or total tangible assets exceeding $25MM, or the applicant must be controlled, directly or indirectly, by any one or more business entities satisfying these criteria. An applicant that does not satisfy the Minimum Qualification Requirement or that satisfies the Requirement but wishes to transact or clear as a Contracting Party through a Contracting Party willing to act on behalf of such a Contracting Party, may request participation rights as a "Customer Participant".

Contracting Parties are expected to satisfy the Minimum Qualification Requirement on an ongoing basis. This is verified by NGX on at least an annual basis, more frequently for business entities close to the minimum threshold. A Contracting Party must also maintain adequate and appropriate regulatory approvals to support its trading and clearing activities. Disciplinary actions taken against a Contracting Party by applicable regulatory authorities are considered with respect to ongoing participation eligibility.

Compliance Staff subscribe to email services that provide notification when a market participant has been disciplined by an applicable regulatory authority; Compliance staff also routinely search for and review those disciplinary actions imposed to verify that a Contracting Party remains in good standing.

All Contracting Parties are subject to the same standards for admission, and on an ongoing basis.

Key Consideration 2: An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and commensurate with the FMI's specific

risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavour to set requirements that have the least-restrictive impact on access that circumstances permit.	
	NGX's CPA is publicly disclosed on NGX's website and includes several representations to which market participants are held on an ongoing basis. These include, but are not limited to, understanding of all risks and costs associated with trading and clearing through NGX, that the Contracting Party is willing to assume those risks, and that the Contracting Party is a sophisticated investor. In certain regulatory jurisdictions a representation may apply wherein Contracting Party asserts that it is eligible to transact and clear NGX products. All sign up requirements and details of the sign up process are available on NGX's website. In addition, Marketing, Operations and Clearing staff continually work with customers to ensure their understanding of client participation requirements for new and existing clients. Contracting Parties also represent that they have the requisite capacity to make/take delivery, can respond to and satisfy a request for additional collateral within one business day and will make invoice payments on an ongoing basis. Each Contracting Party must meet minimum available margin requirements at all times, with market participants that wish to clear products associated with a higher risk profile required to maintain additional available margin. For a business entity that may apply as a Customer Participant it is important to note that a Contracting Party acting on its behalf assumes all of the Customer Participant's liabilities to NGX, as outlined in the Contracting Party's Agreement. To date all NGX Contracting Parties are direct participants. NGX's participation requirements are reviewed on an ongoing basis, and adjustments may be proposed if such requirements are deemed too liberal or too restrictive or might otherwise expose NGX to unacceptable risks. Also, NGX may amend participation requirements to conform with amendments to applicable legislation.
Key Consideration 3: An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements.	
	Contracting Parties are expected to satisfy the Minimum Qualification Requirement on an ongoing basis. This is verified by Clearing personnel at least annually, more frequently as may be required for business entities close to the minimum threshold. Compliance staff also subscribe to several news feeds, including industry publications and press releases from regulatory authorities, exchanges and clearinghouses. These subscriptions help to ensure Compliance staff are promptly notified when a market participant or certain of its senior personnel has been disciplined and/or restricted from certain types of activities, which may in turn impact the continuing eligibility of a Contracting Party. Compliance staff survey the websites of

	various media outlets, regulatory authorities, exchanges and clearinghouses for similar news items. Information considered by Compliance staff in this context is generally available through the public domain unless otherwise provided by the Applicant or Contracting Party. While NGX does not require that a Contracting Party re-submit the information required for new applicants on an annual basis, NGX may request supplemental information from time to time to ensure a Contracting Party remains in good standing. When NGX personnel are of the belief that a Contracting Party's continuing eligibility may be in jeopardy that Contracting Party may be added to the Watchlist. NGX monitors companies on its Watchlist more closely and may request updated information, including financial statements and regulatory filings more frequently. Contracting Parties represent that they will at all times satisfy the participation requirements. If they no longer satisfy the requirements they will be notified by NGX. NGX may, depending upon the circumstances, allow the Contracting Party an opportunity to continue to trade/clear while working to correct the deficiency to NGX's satisfaction or it may issue a Contracting Party Suspension, revoking access to NGX's markets. The consequences of a Contracting Party suspension are clearly outlined in the CPA.

Principle 19: Tiered Participation Arrangements

An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.

Key Consideration 1: An FMI should ensure that its rules, procedures, and agreements allow it to gather basic information about indirect participation in order to identify, monitor, and manage any material risks to the FMI arising from such tiered participation arrangements.

To date all NGX Contracting Parties are direct participants. The CPA includes provisions for tiered participation procedures and requirements. NGX also has reports that would enable transparent position and exposure reporting for tiered participants.

The CPA discusses an option for a business entity to submit an application as an indirect participant (Special Participant or Customer Participant) through another Contracting Party willing to act on its behalf and assume its obligations to NGX. To date NGX has not received such a request from any Applicant.

Key Consideration 2: An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.

Not applicable. To date all NGX Contracting Parties are direct participants, and as such NGX has not identified any material dependencies.

Key Consideration 3: An FMI should identify indirect participants responsible for a significant proportion of transactions processed by the FMI and indirect participants whose transaction volumes or values are large relative to the capacity of the direct participants through which they access the FMI in order to manage the risks arising from these transactions.	
	Not applicable. To date all NGX Contracting Parties are direct participants.
Key Consideration	
4: An FMI should regularly review risks arising from tiered participation arrangements and should take mitigating action when appropriate.	
	To date all NGX Contracting Parties are direct participants, and as such NGX has not identified any unanticipated risks that may arise from permitting indirect participation as a Customer Participant. As noted above, a Customer Participant must have a Contracting Party willing to act on its behalf and assume liability for its obligations to NGX, so NGX does not anticipate being exposed to additional risk by permitting indirect participation. As described above, each Contracting Party must meet minimum available margin requirements at all times, with market participants that wish to clear products associated with a higher risk profile required to maintain additional available margin. NGX assesses these minimum thresholds on an ongoing basis (through daily margin calls) and may adjust accordingly if conditions merit.

Principle 20: FMI Links

An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.

Key Consideration 1: Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor, and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.	
	Not applicable. NGX does not have links to another FMI. To the extent that NGX has engaged in the assessment with the opportunity of another FMI link, a risk assessment of potential sources of risk would be conducted and reviewed by NGX management, RMC and the NGX Board as appropriate.
Key Consideration 2: A link should have a well-founded legal basis, in all relevant jurisdictions, that supports its design and provides adequate protection to the FMIs involved in the link.	
	Not applicable. NGX does not have links to another FMI. To the extent that NGX has engaged in the assessment with the opportunity of another FMI link, a risk assessment of potential sources of risk would be conducted and reviewed by NGX management, RMC and the NGX Board as appropriate.

Key Consideration 3: Linked CSDs should measure, monitor, and manage the credit and liquidity risks arising from each other. Any credit extensions between CSDs should be covered fully with high-quality collateral and be subject to limits.	
	Not applicable. Applies to FMI Central Securities Depository and Securities Settlement System classifications.
Key Consideration 4: Provisional transfers of securities between linked CSDs should be prohibited or, at a minimum, the retransfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.	
	Not applicable. Applies to FMI Central Securities Depository and Securities Settlement System classifications.
Key Consideration 5: An investor CSD should only establish a link with an issuer CSD if the arrangement provides a high level of protection for the rights of the investor CSD's participants.	
	Not applicable. Applies to FMI Central Securities Depository and Securities Settlement System classifications.
Key Consideration 6: An investor CSD that uses an intermediary to operate a link with an issuer CSD should measure, monitor, and manage the additional risks (including custody, credit, legal, and operational risks) arising from the use of the intermediary.	
	Not applicable. Applies to FMI Central Securities Depository and Securities Settlement System Classifications.
Key Consideration 7: Before entering into a link with another CCP, a CCP should identify and manage the potential spill-over effects from the default of the linked CCP. If a link has three or more CCPs, each CCP should identify, assess, and manage the risks of the collective link arrangement.	
	Not applicable. NGX does not have links to another FMI. To the extent that NGX has engaged in the assessment with the opportunity of another CCP, a comprehensive risk assessment would be conducted and reviewed by NGX management, RMC and the NGX Board as appropriate.
Key Consideration 8: Each CCP in a CCP link arrangement should be able to cover, at least on a daily basis, its current and potential future exposures to the linked CCP and its participants, if any, fully with a high degree of confidence without reducing the CCP's ability to fulfil its obligations to its own participants at any time.	
	Not applicable. NGX does not have links to another FMI. To the extent that NGX has engaged in the assessment with the opportunity of another CCP, a comprehensive risk assessment, including liquidity requirements, would be conducted and reviewed by NGX management, RMC and the NGX Board as appropriate.
Key Consideration 9: A TR should carefully assess the additional operational risks related to its links to ensure the scalability and reliability of IT and related resources.	
	Not applicable. Applies to FMI Trade Repository classifications.

Principle 21: Efficiency and Effectiveness

An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.

Key Consideration 1: An FMI should be designed to meet the needs of its participants and the markets it serves, in particular, with regard to choice of a clearing and settlement arrangement; operating structure; scope of prod cleared, settled, or recorded; and use of technology and procedures.

NGX has evolved its operating structure, products and services since inception in 1994 based on the ongoing feedback of market participants. Marketing, Operations and Clearing maintain daily contact with our Contracting Parties on many fronts and continually receive feedback on our product and service offerings. In addition to daily interaction, Clearing and Marketing meet regularly with Contracting Parties to present overviews of our clearing structure and services and to obtain feedback. The result of these interactions is an ongoing investment in IT system enhancements, regular introduction of new products and services, and changes to procedures and processes to ensure alignment with market requirements on the proviso that NGX's core clearinghouse and operating principles are not compromised.

While verbal feedback and direction from NGX's Contracting Parties are essential feedback mechanisms, the clearest and most objective form of feedback is based upon the volume of business cleared through NGX. Volumes will fluctuate based on a number of external factors (i.e. price volatility, capital costs etc.) however, NGX closely tracks volume trends in aggregate and by individual company, ensuring that it has a good understanding of the rationale for any change in volumes. If such rationale is based upon shortcomings of NGX's services, technologies or structures, NGX will take appropriate action to remedy the deficiency.

NGX's website provides a number of customer resources to ensure participants have all necessary information related to NGX products and services. Additionally NGX has a formal Customer Advisory Group led by the Marketing team that meets on a regular basis to discuss NGX products and services. Feedback from this group is one of the factors integrated into business development objectives and strategic planning process.

Key Consideration 2: An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations, and business priorities.

TMX maintains a highly structured process for development, review, and approval of annual goals and objectives. This is based on a waterfall model whereby TMX establishes overall objectives as approved by its Board of Directors and then each subsidiary, business unit and level of management within the business units develop objectives that align with the overall TMX goals. These objectives are provided in written form, reviewed and approved by each manager, and

	maintained by every employee for ongoing performance review assessments. NGX's overall vision is to be a global leader in transacting and clearing physical commodities. On a more granular level, NGX has operational objectives including: • financial and volume targets; • objectives to ensure maximum Contracting Party capital efficiencies are achieved through correlation offsets, product diversity that allows for more set-off opportunities, and margin methodologies that reduce costs while ensuring collateral requirements are met; • targeted system maximum "downtime" thresholds; • maximum staff turnover targets to ensure NGX is maintaining qualified and experienced personnel; and • regulatory alignment of objectives to ensure cleared transactions meet regulatory requirements of both the clearinghouse and the Contracting Parties.
Key Consideration 3: An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.	
	TMX has a defined performance compensation structure that ensures that all personnel are measured against the aforementioned objectives, and compensation varies in accordance with performance. This structure necessitates that the objectives are measureable and achievable In addition to the Contracting Party feedback process discussed above, NGX uses industry benchmarks and comparisons when (a) available and (b) as applicable to NGX's business, to evaluate its efficiencies in margin rates and volume trends. The evaluation of efficiency and effectiveness are performed on an ongoing basis.

Principle 22: Communication Procedures and Standards

An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.

Key Consideration 1: An FMI should use, or at a minimum accommodate, internationally accepted communication procedures and standards.	
	NGX uses relevant internationally accepted communication procedures and standard TCP/IP protocols. NGX uses SSL/TLS encryption with complex keys and delivers services using a combination of HTTPS and SSH protocols.

Principle 23: Disclosure of Rules, Key Procedures, and Market Data

An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.

Key Consideration 1: An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.

The CPA provides all information relating to the risks, fees and costs of trading and clearing in NGX's markets, as well as all rules pertaining to obligations of the Contracting Party to NGX and vice versa, including but not limited to margining, settlement and defaults. The CPA also details what constitutes a Contracting Party default, the implications of such a default, and the means through which a default may be resolved, as well as the terms and conditions applicable if NGX declares a force majeure event or if either NGX or its regulators declares an emergency situation exists.

NGX ensures its rules and procedures are clear and comprehensive through implementation and use. As situations arise where there may be uncertainties or ambiguities identified in the rules or procedures NGX will make amendments accordingly. For changes to procedures NGX personnel may amend or revise from time to time as needed, while changes to the CPA require advance notice to several stakeholders, including NGX's regulators, settlement bank and insurance provider. Following the review of those stakeholders, the Contracting Party's Agreement provides for a further 6 business days advance notice to Contracting Parties prior to the effective date of a new or amended rule. This is disclosed via email to all participants and stakeholders as well as on NGX's website.

Key Consideration 2: An FMI should disclose clear descriptions of the system's design and operations, as well as the FMI's and participants' rights and obligations, so that participants can assess the risks they would incur by participating in the FMI.

The CPA provides clear descriptions for all Contracting Party rights and obligations as well as the rights and obligations of NGX relating to trading and/or clearing in NGX's markets, includes trade-in-error provisions, margining, settlement, and default rules, as well as the terms and conditions applicable if NGX declares a force majeure or if NGX or one of its regulators declares an emergency situation. In situations where NGX or its regulators may exercise discretion the degree of discretion is also stated.

NGX's trade matching engine is provided through ICE, and as such each Contracting Party must also execute an ICE Participant's Agreement to access trading software. Because ICE is the software provider ICE provides participants with the necessary technical documentation and appropriate related materials, including access to demonstration systems, specifications for submitting orders via API interface, etc.

	NGX's Clearing system is developed in-house and is accessible via any internet browser, negating the need for extensive systems-specific documentation. NGX has made available to Contracting Parties a technical specification that provides guidance for accessing NGX's reports via an API. NGX does maintain technical documentation (e.g. Systems Development Life Cycle, Change Management Policy, etc.) relating to its systems, but does not disclose any system information to participants or the public. NGX will provide this information to its regulators upon request.
Key Consideration 3: An FMI should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the FMI's rules and procedures and the risks they face from participating in the FMI.	
	The CPA contains all information relating to all items associated with trading and/or clearing in NGX's markets. NGX publicly discloses a Sign-up Guide, which describes the steps required to become a Contracting Party as well as specific requirements for acceptable forms of collateral, and a Margin Methodology Guide that explains NGX's margining rules and triggers as well as settlement and payment cycles. Prior to executing the CPA Marketing and Clearing staff will typically engage in discussion with an Applicant to ensure there is a clear understanding of the rules pertaining to margining, settlement and defaults. Further consultation regarding NGX's procedures is done through the Customer Advisory Group with the Marketing group. Additionally, the Clearing and Marketing groups visit with Contracting Parties throughout the year to assist with any issues they may have regarding NGX's model. NGX's Clearing overview is available on the website which described the business, clearing model, regulatory structure and default waterfall of NGX. When NGX personnel identify a Contracting Party that struggles to comply with requests for additional collateral, making timely settlement payments, or making/taking physical delivery on a recurring basis, the Contracting Party is contacted in order to communicate the need to comply with its rules and employ cross department additional monitoring procedures. NGX personnel will work with the Contracting Party on these matters to ensure a clear understanding is achieved. Encouraging the Contracting Party to regularly monitor its exposures and deliveries is often sufficient.
Key Consideration 4: An FMI should publicly disclose its fees at the level of individual services it offers as well as its policies on any available discounts. The FMI should provide clear descriptions of priced services for comparability purposes.	
	NGX fees associated with products and services is outlined in the CPA and publicly disclosed on its website. In the event NGX intends to amend any of its fees or services, product listings, or any of the terms and conditions the CPA, NGX must provide at least six business days advance notice to Contracting Parties. In accordance with that rule, NGX ensures it makes an amendment available on its website at least six business days prior to the effective date and will concurrently notify Contracting Parties of the amendment via email.
Key Consideration 5: An FMI should complete regularly and disclose publicly responses to the CPSS-IOSCO disclosure framework for financial market infrastructures. An FMI also should, at a minimum,	

disclose basic data on transaction volumes and values.	
	NGX publicly discloses various transactional data and its observance of PFMI principles, which is updated as required to include current practices and any other material changes. At the end of each trading day for each product and tenor offered for trading and clearing NGX makes available the number of transactions, total volume traded, open, high, low, and settlement price and open interest. This information may be retrieved on an historical basis, for up to 5 days prior through NGX's website. Additional historical data is available to Contracting Parties via secure login. In addition to market data, the CPA, the Margin Methodology Guide, and the Sign-Up Guide, NGX provides a publicly disclosed Index Methodology Guide, which details the methods for calculating NGX's natural gas, electricity and crude oil indices. These documents are updated as necessary. All information on NGX's website is provided in the English language only.

Principle 24: Disclosure of Market Data by Trade Repositories A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.
NOT APPLICABLE AS APPLIES TO FMI TRADE REPOSITORY CLASSIFICATION

V. LIST OF PUBLICLY AVAILABLE RESOURCES

From the NGX website (www.ngx.com) under Customer Resources

- Contracting Party Agreement
- NGX Fee Schedule
- NGX Index Methodology Guide
- NGX Margin Methodology Guide
- NGX Product Summary

From the TMX Group website (www.tmx.com) under Investor Relations

- Quarterly and Annual Reports
- Regulatory Filings

From the Alberta Securities Commission website (www.albertasecurities.com)

- NGX Clearing Agency Recognition Order and subsequent amendments
- NGX Exchange Recognition Order and subsequent amendments

From the US Commodity Futures Trading Commission website (www.cftc.gov)

- NGX Derivatives Clearing Organization registration

- NGX Foreign Board of Trade registration

From Industry Canada website (www.ic.gc.ca) under Corporations

- List of Directors