RISK MANAGEMENT – IDENTIFICATION AND MITIGATION MEASURES

1. This evidence discusses Enbridge's overall risk management approach, and includes identification and discussion of the specific risks applicable to Enbridge in the carbon market for 2018, along with planned mitigation measures to address the risks. Where the analysis and mitigation measures specific to a particular risk are confidential, redactions have been made.

Overall Risk Management Approach

2. As set out later in this evidence, Enbridge has evaluated the specific risks associated with meeting its Cap and Trade obligations, and has developed mitigation strategies to address each one. More generally, however, the Company has developed broad policies, procedures and approaches to identify and manage risks associated with meeting compliance obligations.

3. Enbridge's Carbon Procurement Governance Group ("CPGG") is charged with overseeing the implementation of Enbridge's Compliance Plan. The CPGG is responsible for reviewing natural gas sales volumes and resulting emissions, carbon market information, and implementing adjustments to Enbridge's carbon procurement strategy. To ensure that the strategy meets the OEB's Guiding Principles, it will be reviewed periodically throughout the year. Enbridge's Compliance Plan provides the flexibility to adjust its procurement plans to reflect changes in market conditions and other relevant factors. Any adjustments will be subject to Enbridge's internal governance processes and will be recorded as required in the Company's annual monitoring report to the Board. For additional

information regarding specific details of the CPGG refer to EB-2016-0300, Exhibit C, Tab 1, Schedule 1.

4. Flexibility in the Company's Compliance Plan strategy in combination with closely monitoring the carbon regulations and markets will ensure Enbridge achieves its compliance obligations and the OEB's Guiding Principles. A focus on market intelligence and market involvement results in: 1) cost effectiveness and procurement optimizations by monitoring supply and demand dynamics; 2) rate predictability by positioning the Company to meet its compliance obligations; 3) cost recovery as the Company is able to demonstrate it acted diligently in understanding and responding to market information; 4) flexibility by Enbridge being knowledgeable of market conditions and regulatory changes to adapt its compliance strategy; and, 5) continuous improvement through an increasingly expert group of resources inside the Company around carbon markets, related policies and Cap and Trade sustainment.

5. As discussed in EB-2016-0300, the Company has developed a Risk Management document. This document was prepared in collaboration with Enbridge's Risk, Carbon Strategy and Legal groups. The document was reviewed and approved by the CPGG and then provided to Enbridge's Compliance Financial Risk Management Committee ("CFRMC") for approval. The Risk Management document, which is strictly confidential in nature, provides input and insights into the Company's procurement strategy.

6. The Company's Risk Management document sets out the compliance instruments that the Company deems to be acceptable from a risk perspective. Enbridge notes that this document will be updated, as required, to reflect factors such as, but not limited to, market conditions, compliance instrument availability and general market knowledge. The Risk Management document was previously filed in EB-2016-0300 and is filed for reference as Appendix A to this Exhibit.

7. The Risk Management document contains a Delegation of Authority section, which specifies the maximum amount that an individual can purchase based on their rank within the Company. In addition to providing control over such actions, this also addresses operational risk by ensuring there is no purchase that is administratively inaccurate or cannot be completed.

8. Furthermore, the Risk Management document contains an Operational Risk procedures section to identify and attempt to mitigate any operational type. It should be noted that due to the nascent state of the markets, both primary and secondary, these Operational Risk procedures are subject to change.

9. Enbridge introduced at the start of 2017 and will continue in 2018 with the 'Plan-Do-Check-Act' cycle for the implementation of its Compliance Plan. This cycle will assist the Company in identifying new risks and ensuring that new and existing risks are recognized and effectively mitigated.

10. The Company will stay abreast of changes to regulations and market conditions through a number of activities, which may include, but are not limited to, attending conferences, establishing relationships with market players, seeking consulting or

legal support where required, subscribing to carbon market intelligence platforms, involvement in Cap and Trade associations and/or committees in various applicable industry associations, reading relevant Cap and Trade market articles, and actively staying involved in policy stakeholder processes to support the interests of ratepayers. Understanding market behavior and the impact of regulatory changes will assist the Company in making appropriate and timely risk-based decisions around its strategy.

<u>Discussion of Specific Risks</u>

11. An understanding of the risks inherent to Ontario and the broader Western Climate Initiative (“WCI”) Cap and Trade markets is important to ensure flexibility is built into Enbridge’s Compliance Plan in order to address these risks. Through risk identification, Enbridge will be able to implement risk management programs proactively. Enbridge has been actively taking steps to identify risks, with the Board’s Guiding Principles foremost in mind. The fewer unmitigated risks, the greater probability of Enbridge’s Compliance Plan achieving the Board’s Guiding Principles. Exhibit C, Tab 2, Schedule 1, Table 2, shows how Enbridge’s selected procurement strategy mitigates risk against each of the Guiding Principles.

12. In the Framework, the Board has identified that the following risks must be discussed in the Compliance Plan:
    a. allowance price variability;
    b. volume variability;
    c. emission unit availability;
    d. market risk; and
    e. non-compliance.

13. For clarity, Enbridge has defined market risk as risks present due to the design of the Cap and Trade market.

14. Enbridge has identified additional risks that it believes are applicable for discussion within the Company's Cap and Trade Compliance Plan. They include:
    f. financial transaction risks;
    g. risk of data dissemination to market participants;
    h. operational risks; and,
    i. offset specific risks.

15. The following sections provide details on the risks that have been identified by the Board as well as the additional risks identified by Enbridge. The details about Enbridge's analysis of each risk, and the mitigation measures to address each risk, are found below (where the information is confidential, it has been redacted).

<u>Allowance Price Variability – Risk Identification</u>

16. The price of an emission allowance in 2018 may vary as a result of many factors, most notably the following:
    i. Fluctuation in currency exchange, inflation and interest rates;
    ii. Price differences between auction and Over the Counter ("OTC") markets; and
    iii. Regulatory changes in the California Cap and Trade program.

    Each of these items is discussed in the following paragraphs.

17. The auction reserve price, also referred to as the floor price, is set by the greater of the Ontario, California or Québec floor prices. Provided that the emission

allowance price is set by the California auction reserve price, exchange rate fluctuations will result in allowance unit price variability. This is a risk embedded into the Ontario Cap and Trade program where costs are converted to Canadian dollars ("CAD") from US dollars ("USD").

18. The Consumer Price Indices for Ontario, United States, and Quéebec are inputs into the derivation of the annual auction floor prices for Ontario, California and Québec, respectively. As such, a significant change in an inflation rate will alter the floor price of an emission allowance. Due to federal government policies in both Canada and the United States, the risk associated with significant fluctuations in inflation is minimal. Inflation rate risk is inherent to all market participants. Following the establishment of the annual auction floor price, market dynamics and foreign exchange rates are the primary factors that affect the price of an allowance.

19. As evident historically in the WCI market, there were periods where the price of emission allowances on the OTC market traded both above and below the floor price. This is an example of pricing differences that may result in emission allowance price variability.

[redacted]

<u>Allowance Price Variability – Analysis of Risk and Mitigation Measures</u>

21. In the Framework (page x), the Board requested that the Utilities conduct scenario analysis on the price of emission units, including foreign exchange rate risk.

[redacted]

[redacted]

[redacted]

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

[redacted]

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Table Deleted

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

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Table Deleted

[redacted]

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

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[redacted]

[redacted]

Volume Variability – Risk Identification

40. Volume variability is primarily attributed to the following factors:

   a. weather, measured in heating degree days ("HDD");
   b. decrease in throughput as a result of pricing signals from carbon costs or gas costs (e.g., price sensitivity);

[redacted]

c. decrease in throughput due to demand side management ("DSM") programs including incremental energy efficiency programming (e.g., Green Investment Fund ("GIF") activity) and changes to codes and standards;
d. change in the number of Cap and Trade program participants;
e. increase in throughput as a result of community expansion, incremental customer additions and uptake of natural gas as a transportation fuel; and,
f. changes in demand by natural gas fired power generators.

41. As a result of all of the factors listed above that may cause volume variability, Enbridge's Customer-related greenhouse gas ("GHG") emissions could vary from the forecast provided in Exhibit B, Tab 3, Schedule 1.

42. Natural gas demand is influenced by a number of factors, most notably weather. Gas prices are another factor that may impact demand. Details on the derivation of the 2018 gas volume forecast can be found in Exhibit B, Tab 2, Schedule 1.

43. To the extent that actual weather in 2018 differs from the assumed weather conditions embedded within the volumetric forecast, significant swings in actual volumes and emissions generated could be realized.

44. Enbridge's volume variability may also be impacted by new and existing DSM initiatives, implementation of the GIF-funded and other abatement programs, electrification projects and de-carbonization technologies, changes to building codes and standards and execution of the government's Climate Change Action

Plan. The successful implementation of any or all of the above initiatives will result in volume variability.

45. Variability from Enbridge's forecast volume included in Exhibit B, Tab 2, Schedule 1 may also arise if the number of customers who are capped participants changes from those that were known at the time the forecast was developed. This could occur, for example, as entities decide to individually manage their own compliance obligations, and opt-in to the Cap and Trade program as voluntary participants. Additionally, if RNG is procured and injected in the system in place of conventional natural gas in 2018, then emissions will decrease. If and when these things occur, Enbridge's compliance obligation will decrease.

46. Enbridge has used a list of known capped participants from the Ministry of the Environment and Climate Change ("MOECC") and also reached out to potential opt-in customers in order to subtract volumes forecasted for capped participants. This list is current as of September 2017; however, voluntary participants may register for participation in Ontario's 2018 Cap and Trade program up to December 31, 2017.

47. Any initiative that increases Enbridge's aggregate in-franchise natural gas usage could increase volume variability. For example, customer additions, community expansion and an increase in the use of natural gas as a transportation fuel could increase Enbridge's natural gas throughput if such increases more than offset reductions in existing customer usage. The impact of such initiatives is not expected to be material in 2018.

48. As per the Regulation, Enbridge has compliance obligations for emissions from in-franchise natural gas fired power generators. Enbridge notes that approximately 4% of its customer-related GHG emissions are derived from natural gas fired power generators served within its franchise area. Volumes are varied and less predictable than Enbridge's average customer, due to their large usage and because natural gas fired power generators are dispatched by the Independent Electricity System Operator ("IESO") as needed. Volumes may also be impacted by nuclear power refurbishments, which may increase natural gas use by power generators.

49. In the development of Enbridge's 2018 volume forecast, Enbridge requested annual forecast volumes from the power generators in its franchise area. Most of these power generators supply and balance their daily natural gas requirements, and provide Enbridge with daily nominations as required. The Company notes that there is no contractual mechanism or rate class parameters for natural gas fired power generators on an unbundled distribution rate to comply with annual forecasts.

<u>Volume Variability – Analysis of Risk and Mitigation Measures</u>

50. In the Framework, the Board has requested that the Utilities conduct volume variability scenario analyses. [redacted]

[redacted]

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

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[redacted]

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Table Deleted

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Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

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[redacted]

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

Emission Unit Availability – Risk Identification

58. Reduced emission allowance availability could be a result of several factors, including:
    a. Cap and Trade program design; and,
    b. participation of market participants.

    Each of these items is discussed in the following paragraphs.

59. Enbridge understands that the 2018 cap for Ontario was set by the MOECC to match the forecasted province-wide GHG emissions for the sectors covered by Cap and Trade in 2017, less the annual cap decline factor. While Enbridge is not privy to all of the details underpinning the government's forecasting methodology, the Company recognizes that there is some inherent risk in all forecasting. As such, it is possible that the cap will actually be lower than actual emissions and demand may be much higher than anticipated. This could happen in particular due to an increase in heating fuel use across the province, and therefore an increase in emissions, due to a colder winter than forecast. Enbridge recognizes, however, that linkage with the WCI market will provide a larger availability of allowances.

60. Greater participation by banks, insurance companies and other speculators as market participants may also reduce emission unit availability at auction. Each market participant may purchase up to four percent of available allowances at auction.

Emission Unit Availability – Analysis and Mitigation Measures

61. An analysis of the supply and demand economics of the WCI Cap and Trade market, including Ontario, is included in the carbon market price forecasts, filed (confidentially) at Appendix A to Exhibit C, Tab 3, Schedule 1.

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford

[redacted]

[redacted]

64. As for mitigation measures, as explained in the Overall Risk Management Approach section above, Enbridge will monitor the Cap and Trade market and adjust its compliance strategy as necessary.

65. Enbridge recognizes that its compliance obligation may change should a change in natural gas volumes occur. The flexibility of the Company's strategy in conjunction with the ongoing planning and governance processes will assist in mitigating any potential impact.

Market Risk – Risk Identification

66. Market risk could be realized due to several factors, including:
    a. change in carbon policy;
    b. Cap and Trade and GHG reporting regulation changes; and,
    c. linkage with other markets.

    Each of these items is discussed in the following paragraphs.

67. It is anticipated that in 2018 there will be an Ontario election. Cap and Trade has been introduced to the Ontario market by the current Liberal government. Signals from the Progressive Conservative party indicate an interest in moving from Cap and Trade system to a Carbon Tax policy. If for any reason Cap and Trade was discontinued by the government in 2018, any carbon allowances purchased may be devalued or possibly rendered useless. Although the Company has identified this risk, beyond staying abreast of the Progressive Conservative's policy platform and associated plans, there may be no way to reasonably or fully mitigate this outside risk. Enbridge finds it difficult to believe that there would not be a time horizon or grace period rendered to any businesses that have participated thus far.

68. More generally, Enbridge recognizes that future changes in the Regulation, and any associated regulations, could impact the Company's compliance obligation, costs to comply and ability to comply with the Cap and Trade program.

69. For example, Enbridge has identified the potential (in future years) for GHG emission forecast changes as a result of the inclusion of new emission sources, or adjustments to calculation methodologies, default emission factors and global warming potentials ("GWP") in the Ontario GHG reporting regulation. Any

adjustment will impact the number of emission allowances required for the compliance period. This risk is similar to that of volume variability.

<u>Market Risk – Analysis of Risk and Mitigation Measures</u>

70. As discussed in Exhibit C, Tab 6, Schedule 1, Enbridge will remain current on changes to the Cap and Trade and GHG reporting regulations. To ensure this, Enbridge will continue to maintain a close relationship with the MOECC so that it will be included as a stakeholder during discussions about future regulatory changes. Enbridge also actively participates in industry associations such as Canadian Energy Partnership for Environmental Innovation ("CEPEI") to remain current on GHG reporting.

71. Enbridge has calculated that if the Global Warming Potentials ("GWP") values provided in Ontario's GHG reporting regulation[8] change to values that have been published more recently by the Intergovernmental Panel on Climate Change ("IPCC")[9], then Enbridge's compliance obligation would remain materially the same.

[redacted]

[redacted]

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[8] https://www.ontario.ca/laws/regulation/090452
[9] For information on GWPs, refer to http://ghginstitute.org/2010/06/28/what-is-a-global-warming-potential/

[redacted]

Non-Compliance – Risk Identification

74. Non-compliance occurs when a capped participant does not hold an adequate number of emission allowances in its compliance account for the compliance period, to meet its carbon compliance obligation. If an entity is short allowances relative to its obligation, it will be required to procure those allowances at the market price. Additionally, the entity will be also be assessed a penalty of three allowances for each allowance that it is short at the time of remittance. These additional penalty allowances will have to be procured at the market cost.

75. Non-compliance could occur as a result of any number of the risks that have been identified or others that have not yet been identified.

76. The Cap and Trade program design is such that participants do not need to surrender allowances to the government until the end of the compliance period. For the first compliance period of 2017 to 2020, Enbridge will be required to surrender allowances totaling its 2017 to 2020 cumulative emission compliance obligation, by November 1, 2021. This is done by placing the appropriate amount of allowances into the Company's Compliance Instrument Tracking System Service ("CITSS") compliance account.

Non-Compliance – Analysis and Mitigation Measures

77. As noted above, the cost of non-compliance is three allowances for every one allowance short. In other words, if Enbridge did not hold sufficient allowances at

the end of the compliance period, the Company would need to purchase four allowances for each allowance it was short. Additional administrative monetary penalties may also apply[10].

[redacted]

79. Enbridge recognizes that Cap and Trade is a compliance requirement, and therefore the Company has mitigated against the risk of non-compliance through the development of a robust and flexible procurement strategy. Furthermore, Enbridge's governance structure for the Cap and Trade program will minimize the risk of non-compliance through proper and diligent oversight of emission allowance transaction and reporting. Governance with respect to the Compliance Plan is discussed in Exhibit C, Tab 1, Schedule 1.

<u>Financial Transaction Risks – Risk Identification</u>

80. Enbridge has identified counterparty credit risk as the primary financial transaction risk when dealing with external parties.

<u>Financial Transaction Risks – Analysis and Mitigation Measures</u>

81. Through its experience with natural gas procurement, Enbridge has developed relevant procedures that will be used in the event of counterparty allowance

[10] Details of the planned framework for "Administrative Penalties" were set out in a Discussion Paper issued by the MOECC on September 24, 2017.

procurement. These procedures will minimize counterparty credit risk.

82. Enbridge's Carbon Emissions Trading Agreement for bi-lateral transactions includes a clause for credit requirements. The Company's credit policies for carbon transactions will be based on its credit policies in place for natural gas procurement.

Risk of Data Dissemination to Market Participants – Risk Identification

83. In order to avoid "tipping,"[11] Cap and Trade participants are prohibited under the Act from disclosing information, including, but not limited to, future or past participation in auctions, bidding strategies, the amount of a participant's bids and financial information.

84. Enbridge recognizes that it is a large Cap and Trade participant and any dissemination of information regarding Enbridge's procurement strategy or auction participation could cause prices on the Cap and Trade market to go up. Even a very modest increase in allowance prices could cause noticeable increases in Enbridge's costs that are passed on to ratepayers.

Risk of Data Dissemination to Market Participants – Analysis and Mitigation Measures

85. It is difficult to determine the impact that disclosure of data could have on the market without knowing the specifics of the data disclosed and the available uses that such data might offer to the recipient. This being said, Enbridge recognizes that the impact could be financial and detrimental to ratepayers and should therefore be carefully avoided.

[11] Section 29(5) of the Act refers to tipping as informing another person of information that has not generally been disclosed and that could reasonably be expected to have a significant effect on the price or value of emission allowance or credit.

86. To mitigate against the risk of improper disclosures of market sensitive information the Company has established appropriate internal controls. A restricted group of employees will be privy to the carbon procurement strategy and planned future or past auction participation. While this group of people will be as small as possible, the Company notes that employees in key departments such as Finance, Law, and Regulatory Affairs, will have access to certain aspects of the Company's Cap and Trade strategy or auction participation. All employees who are granted access to Cap and Trade strategy and auction participation will be required to confirm their obligation to treat the auction and market confidential information with the upmost sensitivity.

87. More generally, the Company recognizes the importance of confidentiality with respect to its Cap and Trade activities. Internally, the Company has developed training to explain the Cap and Trade program along with its confidential aspects and implications. New employees who have access to or knowledge of Enbridge's Cap and Trade file will be required to review this training material.

<u>Offset Risks – Risk Identification</u>

88. The following risks are associated with the procurement of offset credits:
    a. volume delivery risks;
    b. operational risks; and
    c. invalidation risks.

Each of these items is discussed in the following paragraphs. The Company notes that the influence of the above mentioned risks depends on the type of offset (i.e., primary[12] or secondary[13]) procured.

89. Volume delivery risk arises from the inability of an offset project sponsor to deliver the contracted amount of offsets on an agreed upon date. This risk is mainly associated with primary offset projects, where a contract for the offset credits may be in place before the project is operational and its results verified. Volume delivery risks are less likely to be of concern through the purchase of secondary offsets.

90. Similar to volume delivery risk, operational risks are primarily associated with primary type offsets. Operational risk may result from improper, insufficient or inaccurate measurement of the GHG abatement capacity of a specific project. Operational risks are not considered to be material for secondary offset projects.

91. As noted in Enbridge's 2017 Compliance Plan submission, some offset credits available in the California Cap and Trade market can be subject to invalidation risk. The California Air Resources Board ("ARB") notes that, "…[it] may implement its invalidation provisions if it finds that an ARB offset credit does not meet the requirement of the Regulation."[14]

92. Based on the draft Ontario Offset Credits Regulation published by the MOECC on October 4, 2017, Enbridge understands that purchasers of Ontario offset credits will not bear invalidation risks. As is the case in Québec, under the proposed Ontario Regulation, it will be sponsors of offsets that are later invalidated who will have to replace those credits.

[12] Exhibit A, Tab 5, Schedule 1
[13] Ibid
[14] https://www.arb.ca.gov/cc/capandtrade/offsets/arboc_guide_regul_conform_invalidation.pdf

Offset Risk – Analysis and Mitigation Measures

93. Enbridge notes that the offset market in Ontario is not yet launched and is still uncertain as the protocols and applicable Regulations have not yet been finalized. At this point, the only draft protocol that has been published relates to landfill gas. Once finalized, Enbridge will seek to evolve its understanding of the risks.

94. As detailed in Exhibit C, Tab 1, Schedule 1, Enbridge has retained ClearBlue to develop an offset strategy. ClearBlue's team has multiple years of experience in offset project development, origination and trading. This strategy along with additional support from ClearBlue will assist Enbridge in gaining experience and the 'know-how' to mitigate the above mentioned risks from its offset portfolio.

[redacted]

[redacted]

Witnesses: A. Langstaff
J. Murphy
F. Oliver-Glasford