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RISK MANAGEMENT – IDENTIFICATION AND MITIGATION

- Risks are present in all markets. Risk management is the process whereby risks are identified, understood and then managed through processes, procedures or programs.
- 2. An understanding of the risks inherent to Ontario's Cap and Trade market 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 identify risks and implement risk management programs proactively. Enbridge has been actively taking steps to identify risks, with the guiding principles identified by the Board in mind. The fewer unmitigated risks, the greater probability of Enbridge's Compliance Plan achieving the Board's Guiding Principles for Cap and Trade. Exhibit C, Tab 2, Schedule 1, Table 3, shows how the procurement strategy in particular mitigates risk against each of the guiding principles.
- 3. 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.
- 4. Enbridge has identified additional risks that it believes are also applicable for discussion within the Company's Cap and Trade Compliance Plan. They include:

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- a. Financial transaction risks;
- b. Risk of data dissemination to market participants; and,
- A discussion of all risks identified above, including mitigation efforts, is contained within this exhibit. Longer-term risks, in the five to 10 year horizon, are discussed in Exhibit C, Tab 5, Schedule 1.

Allowance Price Variability – Risk Identification

- 6. The price of an emission allowance at the Ontario-only auction in 2017 may vary as a result of many factors, most notably the following:
 - a. Fluctuation in inflation and currency exchange rates;
 - b. Price differences between auction and Over the Counter ("OTC") markets;
 - c. Status of linkage with the Western Climate Initiative Inc. ("WCI") Cap and Trade market which currently includes California and Québec; and
 - d. Regulatory changes and legal challenges of the California Cap and Trade program.
- 7. As discussed in Exhibit B, Tab 4, Schedule 1, the Ontario auction reserve price, also referred to as the floor price, is set by the greater of the 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 Ontario allowance unit price variability. This is a risk embedded into the Ontario Cap and Trade program where costs are translated to Canadian dollars ("CAD") from US dollars ("USD").

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- 8. The U.S. Consumer Price Index for All Urban Consumers and Québec Consumer Price Index are inputs into the derivation of the auction floor prices for California and Québec. As such, a significant change in an inflation rate will alter the floor price of the emission allowances. Due to federal government policies in both Canada and the United States, the risk associated with significant fluctuations in inflation is minimal. Once again, inflation rate risk is inherent to all market participants.
- 9. As evident in the California market, there were periods where the price of emission allowances on the OTC market traded below the floor price established by the California Cap and Trade regulation.

10. Enbridge recognizes that the Ontario Cap and Trade market will also be influenced by linkage with California and Québec through the WCI Cap and Trade market. Although linkage is not planned until January 1, 2018, the behavior of the WCI auctions and secondary market, as well as by any regulatory changes made by California and Québec could impact the auction clearing price of the 2017 Ontarioonly auctions. The outcome of the legal challenges related to the California Cap and Trade program could also impact the Ontario market.

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Allowance Price Variability – Analysis of Risk

12. In the Framework the Board has requested that Enbridge conduct scenario analysis on the price of emission units, including exchange rate risk.

| Witnesses: | M. Kirk A. Langstaff J. Murphy F. Oliver-Glasford A. Welburn |
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Witnesses: M. Kirk A. Langstaff J. Murphy F. Oliver-Glasford A. Welburn

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| Witnesses: | M. Kirk |
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| | A. Langstaff J. Murphy F. Oliver-Glasford A. Welburn |

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| Allowance Price Variability – Mitigation Measures |
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| Witnesses: M Kirk |
| A. Langstaff |

- J. Murphy F. Oliver-Glasford
- A. Welburn

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31. The Ontario Cap and Trade market is complex, requiring participants to stay abreast of the many informational inputs that impact the demand/supply dynamics. Enbridge will monitor the WCI market as well as all changes proposed or made to Cap and Trade regulations in Ontario, California and Québec. To enable this,

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Enbridge will mitigate the risk of inadequate information 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 regulation/regulatory interpretations are required, subscribing to carbon market intelligence platforms, involvement in Cap and Trade associations and/or committees in various energy industry associations, reading relevant Cap and Trade market articles, and lobby work where necessary to support the interests of our ratepayers. Understanding market behavior and the impact of regulatory changes will assist the Company in making appropriate and timely risk-based decisions on changes to its purchasing strategy.

32. Flexibility in the Company's Compliance Plan strategy and closely monitoring the carbon regulations and markets will ensure Enbridge obtains its compliance obligations and achieves the Board's guiding principles. A focus on market intelligence and involvement results in: 1) cost effectiveness is met by staying on top of the supply/demand dynamics and optimizing procurement opportunities;

; 3) cost recovery is met as the Company is able to show it has been diligent in understanding and responding to market information; 4) flexibility is met by Enbridge being knowledgeable of market conditions and regulatory changes to adapt its procurement strategy; and, 5) continuous improvement is met through an increasingly expert group of resources inside the Company around carbon markets and Cap and Trade implementation.

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Volume Variability - Risk Identification

- 34. 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 (e.g. price sensitivity);
 - 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. Change in demand by natural gas fired power generators.
- 35. 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.
- 36. Natural gas demand is influenced by a number of factors, most notably weather. Details on the derivation of the 2017 gas volume budget can be found in EB-2016-0215 Exhibit C1, Tab 2, Schedule 1.

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- 38. Enbridge's volume variability may also be impacted by new and existing DSM initiatives, implementation of the GIF-funded program, implementation of 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. Excluding Enbridge's DSM programs, it is unknown to what extent the above mentioned programs will affect volume variability in 2017.
- 39. Volume variability will also occur as entities decide to individually manage their own compliance obligations, and opt-in to the Cap and Trade program as voluntary participants. If and when this occurs, Enbridge's compliance obligation will decrease.
- 40. 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 participant's changes from those that were known at the time the forecast was developed. This risk is noted on page 7 of AI's Carbon Market Report, included in Appendix A to Exhibit C, Tab 1, Schedule 1.
- 41. Enbridge has used a list of known capped participants from the MOECC in order to subtract volumes forecasted for capped participants. This list is current as of October 7, 2016; however, mandatory participants have until the deadline of November 30, 2016 in order to register as mandatory participants. The MOECC

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has not identified a deadline for the registration of voluntary participants, however Enbridge understands that voluntary participants may register for participation in Ontario's 2017 Cap and Trade program up to December 31, 2016.

- 42. 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 associated values more than offset reductions in existing customer usage. The impact of such initiatives is not expected to be material in 2017.
- 43. As per the Regulation, the point of regulation for the natural gas fired power generators, not supplied by international or inter-provincial natural gas transmission pipelines, is the in-franchise natural gas distributor. Enbridge notes that approximately 6% of its customer-related GHG emissions are derived from natural gas fired power generators served within its franchise area. Since they are dispatched by the Independent Electricity System Operator ("IESO"), annual consumption by natural gas fired power generators is subject to volume variability. Volumes are more varied and less predictable than Enbridge's average customer, due to their large usage and because natural gas fired power generators are dispatched by IESO as needed.
- 44. In the development of Enbridge's 2017 volume forecast, Enbridge requested annual forecast volumes from six 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. Annual forecasts were not

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received from all power generators, since they are not contractually required to provide an annual demand forecast.

Volume Variability - Analysis of Risk

47. In the Framework, the Board has requested that the utilities conduct scenario analysis on the volume variability. For this first Compliance Plan Enbridge has considered scenarios on volume increases in aggregate. Enbridge may adjust analysis in future Compliance Plans as it learns more about the market.

| Witnesses: | M. Kirk A. Langstaff J. Murphy F. Oliver-Glasford A. Welburn | | |
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Volume Variability – Mitigation Measures

- 51. In order to mitigate the overall risk of volume variability, the Company will monitor the actual monthly consumption as compared to the forecast volumes. As discussed in Exhibit C, Tab 1, Schedule 1, the Carbon Procurement Governance Group ("CPGG") will monitor the variance from the forecast and make adjustments to the Compliance Plan strategy as necessary.
- 52. Enbridge's Compliance Plan, which has been developed with the Board's guiding principles in mind, will provide the Company the ability to adapt to overall volume variability.

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54. Enbridge will continue to communicate on a regular basis with large volume customers, and seek to even better understand their future supply requirements and their Cap and Trade compliance obligations. The Company has Account Executives who meet at least annually with large volume customers for volume requirements. This will be expanded to include discussions about compliance obligations. As well, the Account Executives can facilitate discussion about Company DSM programs and/or other abatement opportunities.

- 55. If any changes, additions or deletions, are made to the capped participants list, Enbridge will adjust its forecast volume. This update to the capped participants list will be done on a monthly basis by the carbon strategy team based on inputs provided by the MOECC and information collected via our Account Executives.
- 56. Enbridge continues to engage and collaborate with natural gas fired power generators and the IESO to better understand their forecasted natural gas requirements. The Company notes however, that even with forecasted demand requirements identified, there may still be variability from the forecast since there is no mechanism in the contracts with the natural gas fired power generators to enforce the forecasted volume. Therefore this volume variability risk cannot be completely mitigated.

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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.
- 59. Enbridge understands that the 2017 cap was set by the MOECC to match the forecasted province-wide GHG emissions for the sectors covered by Cap and Trade. While Enbridge is not privy to 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, leading to availability concerns in the first year of the program. 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.
- 60. Additionally, five percent of allowances created by the government in 2017 will be held back in a strategic reserve.

Further

discussion on the supply-demand balance in the Ontario Cap and Trade market can

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be found on pages 35 to 37 of Al's Carbon Market Report, which is included as Appendix A to Exhibit C, Tab 1, Schedule 1.

61. The Ontario Cap and Trade program, which was modeled after and is similar to the California and Québec Cap and Trade programs, is designed to place market limits on participants. These limits include the holding and purchase limits. While these limits do not constrain the number of allowances available at auction, they do limit a participant's ability to obtain allowances.

63. In the event of increased throughput by the natural gas Utilities, demand for emission units may outpace supply. As discussed under volume variability risk above, higher natural gas throughputs could occur for several reasons, with the main risk being the weather.

64. 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. While the uptake of the Ontario Cap and Trade market by speculators is unknown at this point in time, it is possible that this could lead to reduced

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availability of emission allowances at auction. This may however increase liquidity on the secondary market.

Emission Unit Availability – Analysis of Risk

65. Al has completed an analysis of the supply and demand economics of the Ontarioonly Cap and Trade market. Refer to pages 35 to 37 in Appendix A available at Exhibit C, Tab 1, Schedule 1.

Emission Unit Availability – Mitigation Measures

66. Enbridge will monitor the Ontario and WCI Cap and Trade markets and adjust its compliance strategy as necessary

. Various means to

gain market intelligence will be critical to the Company's ongoing monitoring.

| Witnesses: | M. Kirk A. Langstaff J. Murphy F. Oliver-Glasford A. Welburn | | |
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Market Risk – Risk Identification

70. Enbridge is defining market risk as any risks present due to the design of the Cap and Trade market.

- 71. 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.
- 72. 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. Early signals from the Conservative party indicated interest in moving from Cap and Trade to a Carbon Tax policy. Although this is likely only a risk beginning in 2018, an earlier than anticipated election would put this on the radar for 2017. If for any reason Cap and Trade was discontinued by the government in 2017, any carbon allowances purchased might be worthless. There would be no way to reasonably mitigate this outside risk.
- 73. Enbridge understands that as of the date of this submission, the MOECC has proposed edits to the Regulation.⁴ The Company also understands that the regulations surrounding offset credits, offset protocols, and early reduction credits are not yet written into regulation. Although the current draft changes appear to have a minor impact, Enbridge recognizes that future changes in the Regulation

⁴<u>http://www.ebr.gov.on.ca/ERS-WEB-</u>

External/displaynoticecontent.do?noticeId=MTMwODQ5&statusId=MTk4MjEw&language=en

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could impact the Company's compliance obligation, costs to comply and ability to comply with the Cap and Trade program.

- 74. Enbridge has also identified the potential 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. This risk is similar to that of volume variability.
- 75. Ontario intends to link its Cap and Trade program with California and Québec's Cap and Trade program through WCI. Although linkage is planned for January 1, 2018, an extensive review is required by both WCI partners in order to approve this linkage.
- 76. The linkage between the Ontario and WCI market is expected to increase market liquidity, and thus enable Enbridge greater flexibility in its procurement of compliance options. Linked markets will also provide Enbridge access to offset credits created in partner jurisdictions, thus increasing the number of cost-effective compliance options available to meet the Company's compliance obligation.



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Market Risk – Analysis of Risk

- 79. Enbridge has calculated that if the GWP values provided in the GHG reporting regulation change to values that have been published more recently by the Intergovernmental Panel on Climate Change ("IPCC")⁷, that its compliance obligation would remain materially the same at around 21.1 Mt CO₂e.
- 80. Further analysis regarding Ontario's supply and demand can be found in Al's Carbon Market Report in Exhibit C, Tab 1, Schedule 1, Appendix A.



82. Further analysis on the impact of non-linkage with the WCI market is reflected in the analysis of price variability, and is summarized on Table 1 above.



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Market Risk – Mitigation Measures

83. 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 any discussions about future regulatory changes. Enbridge also actively participates in industry associations such as Canadian Energy Partnership for Environmental Innovation ("CEPEI") to maintain current on GHG reporting.

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Non-Compliance – Risk Identification

- 85. 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 for the corresponding compliance period. If an entity is short allowances relative to its obligation, it will be required to pay the cost to procure those allowances at the most recent clearing price at auction, as well as pay a fine of three times the current clearing price for non-compliance.
- 86. 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.
- 87. In 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 of Risk

88. Enbridge notes that the cost of non-compliance is three allowances for every one allowance short from its compliance obligation. This would mean that if Enbridge was not in compliance at the end of the first compliance period, the Company would

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need to purchase four allowances for each allowance it was short. Additional administrative monetary penalties may also apply¹⁰.

Non-Compliance – Mitigation Measures

- 89. The longer time period provided by the Regulation for surrendering allowances
- 90. Enbridge recognizes 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, and a governance structure.
- 91. Enbridge's governance plan 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.

Financial Transaction Risks – Risk Identification

- 92. Enbridge has identified the following financial transaction risks:
 - a. Counterparty credit risk; and,
 - b. Offset compliance instrument risk.

93.

Witnesses: M. Kirk

A. LangstaffJ. MurphyF. Oliver-GlasfordA. Welburn

¹⁰ Enbridge notes that at the time of this filing, regulations outlining applicable administrative monetary penalties were not yet available.

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- 94. Funds paid by Enbridge for purchasing credits at auctions would be payable to the government of Ontario but would be held in trust with Deutsche Bank, which has been chosen by WCI as the custodian of both the Ontario and WCI Cap and Trade funds. Another counterparty credit risk which could occur is a default by Deutsche Bank. Should this occur, there is a risk that the funds held in trust could be subject to creditor risk.
- 95. The Regulation allows capped participants to obtain eight percent of their annual compliance obligation through the purchase of offsets. For a complete discussion on offsets, refer to Exhibit C, Tab 2, Schedule 1. As of the date of this filing, Ontario's offset regulation is not yet available, and the associated offset protocols are still under development. Due to the timing of the offset regulations and protocols, it is likely that there will be few offset credits available in 2017.
- 96. Offsets as compliance tools may possess risk due to the rules written into regulation. In California, offsets are designed in a way that there is invalidation risk, whereas in Québec this is not the case. This difference of approach to offset regulation makes it difficult to speculate on what the Ontario government may do, and if there will be an invalidation risk.

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Financial Transaction Risks – Analysis of Risk

Financial Transaction Risks – Mitigation Measures

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

| Witnesses: | M. KIIK | |
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| | A. Lanysian I Murphy | |
| | F. Oliver-Glasford | |

A. Welburn

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Risk of Data Dissemination to Market Participants - Risk Identification

- 102. In order to avoid "tipping,"¹² Cap and Trade participants are prohibited under the Act from disclosing information, including future or past participation in auctions and bidding strategies.
- 103. Enbridge recognizes that it is one of the largest participants in the Ontario Cap and Trade market, 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.
- 104. While Enbridge is taking every effort to ensure that it follows the confidentiality requirements of the Act and Regulation, the Company notes that a certain amount of information on the Cap and Trade program is made available by California and Québec after each auction. Under section 64 of the Regulation, the MOECC will also release similar information after Ontario Cap and Trade auctions.
- 105. Information posted after a WCI auction includes:
 - Total number of allowances available and sold at the auction;

Witnesses: M. Kirk

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- A. Welburn

¹² The act of providing material non-public information about a publicly-traded company to a person who is not authorized to have the information. Source: http://www.investopedia.com/terms/t/tipping.asp#ixzz4PNYtoGAT

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- Auction price statistics auction reserve, settlement, maximum, minimum, mean and median;
- Total number of qualified bids divided by the total allowances available;
- Proportion of allowances purchased by compliance entities;
- Herfindahl-Hirschman Index ("HHI") a measure of the concentration of allowances purchased by winning bidders relative to the total sale of allowances in the auction; and,
- List of bidders who qualified to participate in the auction.

| 108. Additionally, information such as Enbridge's throughput and information posted |
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| through submissions to the Board are publicly available. |

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109. Enbridge recognizes that information available in the public realm makes Enbridge's compliance obligation, and procurement strategy, more apparent to other Cap and Trade participants than non-rate regulated participants.

Therefore, the closed markets as structured by the applicable rules, create the risk that Enbridge's compliance obligation may come with a drag on cost effectiveness that would not occur in a truly free and efficient market.

Risk of Data Dissemination to Market Participants - Analysis of Risk

- 110. While Enbridge considers this a key risk, it is difficult to determine what impact disclosure of data could have on the market.
- 111. Enbridge notes that every \$0.01 increase in the average cost per allowance paid results in an annual total increased cost of \$211,360.

Risk of Data Dissemination to Market Participants – Mitigation Measures

112. To mitigate against the risk of improper disclosures of market sensitive information – a critical factor in Enbridge not being subject to a suboptimal market position – the Company has established internal controls to protect our carbon procurement obligation position, the market and our stakeholders. A restricted group of employees will be privileged 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,

Witnesses: M. Kirk

A. LangstaffJ. MurphyF. Oliver-GlasfordA. Welburn

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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.

113. Through an email communication to all employees on September 21, 2016, Enbridge has also informed all employees of the confidentiality requirements with respect to Cap and Trade. This is to ensure that even those employees who are not aware of restricted information, will still understand the confidentiality requirements surrounding Cap and Trade.



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117. Significantly, the holding limit is a fixed formula that is not related to the size of an entity's obligation. It was developed in California where, in sharp contrast to Ontario's regime, the natural gas utilities received a significant portion of free allowances and were not the point of regulation for natural gas power producers. These policy design elements reduced exposure, of natural gas utilities regulated by the California Public Utilities Commission ("CPUC"), to the market. Even then, the CPUC elected to receive and treat in confidence the utilities' entire Compliance Plans, with the exception of the Communications and Outreach portions of their Plans, as well as related CPUC Decisions.

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Overall Risk Management Philosophy

121. Enbridge has completed a review of all the risks discussed in this exhibit based on the likelihood of occurrence and the ability of Enbridge's Compliance Plan to mitigate the risk should it occur. This analysis is based on our understanding of a number of inputs received throughout the year.



- 123. As outlined in Exhibit C, Tab 1, Schedule 1, Enbridge will implement a 'Plan-Do-Check-Act' cycle for the implementation of its Compliance Plan, namely its procurement strategy. This cycle will assist the Company in identifying new risks and ensuring that new and existing risks are recognized and effectively mitigated.
- 124. Exhibit C, Tab 1, Schedule 1 identified tasks and responsibilities of the CPGG. This group will be responsible for reviewing natural gas sales volumes, carbon

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market performance, and implementing adjustments to its carbon allowance procurement strategy. To ensure that the strategy meets the Board's guiding principles, it will be reviewed prior to and after auction participation. Enbridge will have the flexibility, under the Regulation, to adjust its procurement plans. Any adjustments will be subject to the rigorous internal governance processes that will be documented for full transparency to the Board in the Company's annual monitoring report.

125.

metrics will be defined and shared internally within Enbridge, which will ensure that emission allowance procurement activities are closely monitored. These performance metrics should minimize the risk of either an over- or underprocurement scenario. Additional information on governance is available at Exhibit C, Tab 1, Schedule 1.

Furthermore, performance