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Office national de l'énergie

Abandonment Cost Estimates Review 2016

FINAL TECHNICAL CONFERENCE REPORT

Canada

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GLOSSARY OF TERMS AND ABBREVIATIONS

AACEI	Association for the Advancement of Cost Engineering International
ACE	Abandonment Cost Estimate
AFUDC	Allowance for Funds Used During Construction
Alliance	Alliance Pipeline Ltd.
Base Case	A set of preliminary assumptions (including cost parameters and physical assumptions) set out by the Board to facilitate the filing of preliminary estimates of future abandonment costs, proposals to collect abandonment funds, and processes and mechanisms to set aside abandonment costs. Recreated in Appendix A of the User Guide
Revised Base Case or current ACE Framework	Released by the Board on 4 March and 21 December 2010. (A24600; A1W9T3)
Base Case Unit Costs	Preliminary averages or ranges of cost factors available for use by NEB-regulated companies in order to derive abandonment cost estimates in the absence of pipeline-specific estimates. The Unit Costs presented in Table A-3 for individual cost categories constitute the Base Case Unit Costs (A1W9T3).
CAEPLA	Canadian Association of Energy and Pipeline Landowner Associations
CEPA	Canadian Energy Pipeline Association
CEPA Report	2006 report prepared by a subcommittee of the Terminal Negative Salvage Steering Committee of the Canadian Energy Pipeline Association.
collection period	The number of years to fully fund future abandonment costs.
company	General statement referring to a Group 1 or Group 2 company.
cost category	A collection of related activities or expenses expected to be a significant proportion of a company's total abandonment cost estimate.
Discussion Papers	Consists of nine papers released by the Board for comment on 16 August 2017. Discusses the proposed Refined ACE Framework. (Discussion Papers).

DNV Study	Study commissioned by NEB (November 2010) to conduct a literature review regarding the current understanding with respect to the physical/technical issues associated with onshore pipeline abandonment.
80/20	80% abandon-in-place and 20% removal
Enbridge	Enbridge Pipelines Inc. and Enbridge Pipelines (NW) Inc.
Enbridge (NW)	Enbridge Pipelines (NW) Inc.
Enbridge Pipelines	Enbridge Pipelines Inc.
Foothills	Foothills Pipe Lines Ltd.
Group 1 companies	In general, companies that are regulated by the Board with more extensive systems and as such, subject to a greater degree of regulatory oversight on financial matters than Group 2 companies.
Group 2 companies	Companies regulated by the Board, other than Group 1 companies. Group 2 companies tend to have smaller systems, with fewer shippers and are subject to a lighter degree of regulatory oversight on financial matters than Group 1 companies.
Husky	Husky Oil Operations Ltd.
Kinder Morgan	Kinder Morgan Cochin ULC and Kinder Morgan Utopia Ltd.
KM or km	Kilometre(s)
large diameter pipeline	A pipeline with a diameter that is greater than 26 inches or 660 mm.
medium diameter pipeline	A pipeline with a diameter that is 14 to 24 inches or 355.6 to 610 mm.
NEB or Board	National Energy Board
NRCan	Natural Resources Canada
PTAC	Petroleum Technology Alliance Canada
PARSC	Pipeline Abandonment Research Steering Committee. The steering committee responsible for overseeing the management and administration of the research projects and providing direction and guidance to PTAC.
Refined ACE Framework	The framework proposed by the Board staff which consists of a Spreadsheet and a User Guide providing instructions on how to input data into the Spreadsheet.

small diameter pipeline	A pipeline with diameter that is 2 to 12 inches, or 60.3 to 323.9 mm.
TransCanada	TransCanada PipeLines Limited
UPA	Union des producteurs agricoles
User Guide	User Guide outlines the steps required to complete the Spreadsheet as part of the refined Abandonment Cost Estimate framework.
Westcoast	Westcoast Energy Inc., carrying on business as Spectra Energy Transmission

1 BACKGROUND AND INTRODUCTION

In early 2008, as part of its Land Matters Consultation Initiative, the National Energy Board (NEB or Board) established a five-year Action Plan and set out the guiding principles to address the monetary costs of abandoning NEB-regulated pipelines and facilities. In its RH-2-2008 Reasons for Decision, the Board noted two key principles fundamental to its future decisions with respect to financial matters related to pipeline abandonment. These were:

1. Abandonment costs are a legitimate cost of providing service and are recoverable upon Board approval from users of the system
2. Landowners will not be liable for costs of pipeline abandonment

At the same time, the Board provided pipeline companies with Base Case assumptions to use when preparing their abandonment cost estimates (ACEs), which the Board subsequently revised (Revised Base Case) to include cost parameters.

The Board considered Group 1 NEB-regulated companies' first ACE filings in 2012. In February 2013, the Board released its MH-001-2012 Reasons for Decision on the reasonableness of these estimates and its directions to Group 2 companies regarding their estimates.

The Board also set out its expectations of Group 1 companies in advance of the next five-year review. These expectations included, and were not limited to:

- participating in future research studies with multiple stakeholders;
- conducting land use studies;
- collaboration among pipeline companies; and
- consulting with landowners (or their associations) and other interested persons.

Also in MH-001-2012, the Board noted that it anticipated that future developments in research, technology, information sharing, and actual abandonment experience would lead to greater precision in future ACEs, likely informing future initiatives and decisions in these matters.

The Board identified a number of areas – such as land use categories, abandonment costs, contingency costs, and post-abandonment provisions – where some consistency among companies would be helpful for future ACE filing reviews. The Board strongly encouraged companies to work together with Board staff, landowners (or their associations), and other interested persons to achieve, where possible, consistency in land use designation and cost estimate methodology.

In line with what the Board envisioned in MH-001-2012, in August 2017, the Board initiated ACE Review 2016 process, and Board staff developed Discussion Papers, including a proposed Refined ACE Framework, and held a Technical Conference from 21-24 November 2017. At the Technical Conference, companies, organizations, and NEB staff exchanged ideas about possible changes or refinements to assumptions and methodologies regarding ACEs.

We would like to thank the conference participants (Participants) for their open dialogue and feedback on the proposed Refined ACE Framework. We also acknowledge the range of views expressed on the various topics.

The Board provided the draft Technical Conference Report to Participants on 19 April 2018, and sought their comments. The draft report included a summary of the discussions that took place during the technical sessions, and of suggestions made by Participants subsequent to the conference. Throughout this final Technical Conference Report, Board staff have incorporated the comments received.

Structure of this report

This report is structured as follows:

Section 2	Provides an overview of the objectives of the ACE Review 2016
Section 3	Outlines the Discussion Papers and proposed Refined ACE Framework. These documents were issued for comment, and provided the foundation for the Technical Conference sessions and discussions.
Section 4	Provides an overview of the Technical Conference and its objectives.
Section 5	Describes the overall discussions held on each topic and the Board's identified objectives for those discussions. It contains summary notes from each of the Technical Conference's technical sessions. Participants are not identified by name in the summary notes.
Section 6	Identifies steps following the release of this draft Technical Conference Report.
Appendix 1	Lists the Technical Conference Participants.
Appendix 2	Contains the Technical Conference agenda.
Appendix 3	Contains more detailed session notes. These notes elaborate on points summarized in Section 5. Participants are identified by name in Appendix 3.

2 ACE REVIEW 2016

Separate from the Board's assessment of Group 1 companies' 2016 ACE filings, Board staff spearheaded the ACE Review 2016 process, including a Technical Conference. The intent was to refine and advance the abandonment framework the Board developed during the years 2008-2010. The goal of the ACE Review 2016 process is to achieve consistency, transparency, and accuracy among NEB-regulated companies in estimating abandonment costs going forward.

Key steps in this process included:

- providing any interested persons with an opportunity to comment on the preliminary list of topics for the Technical Conference;
- developing a Refined ACE Framework (consisting of a new Spreadsheet and User Guide), and nine Discussion Papers on various topics to facilitate discussion at the Technical Conference;
- soliciting written comments on the Discussion Papers, including on the proposed Refined ACE Framework;
- holding the Technical Conference to enable an informal exchange of information and discussion among industry, landowner associations, and other stakeholders; and
- providing an opportunity to for Participants to file any views in addition to those expressed in their written comments or during the Technical Conference for inclusion in the draft Technical Conference Report.

3 DISCUSSION PAPERS AND REFINED FRAMEWORK

3.1 Refined ACE Framework

Board staff proposed a Refined ACE Framework (Discussion Paper No. 1) to provide greater clarity, consistency, and transparency, and to better test the reasonableness of companies' filed ACEs. This framework was intended to address some of the issues or inconsistencies found by the Board in its initial review of the ACE filings, as well as the challenges that arise when assessing the adequacy of these filings.

The proposed Refined ACE Framework consists of a Spreadsheet and a User Guide with instructions on how to input data into the Spreadsheet and that outlines what supporting information the Board will require to validate the assumptions used. The Spreadsheet will allow companies to enter data in a systematic manner and to easily update that data should any of the assumptions change in the future. It will also assist the Board in comparing cost estimates among the various companies.

3.1.1 Highlights of the Refined ACE Framework

- Uses a common approach for conducting land use studies and for categorizing pipeline systems and above-ground facilities by land use.
- Uses consistent categories and sub-categories for land use, crossings, and above-ground facilities.
- Includes several new sub-categories for land use, crossings, and above-ground facilities that reflect various factors Group 1 companies have considered in developing their ACEs.
- Uses common definitions and descriptions for each land use category.
- Uses consistent units of measurement.
- Reports lengths of pipeline by land use category, pipeline diameter, commodity, and abandonment method assumptions.
- Pre-populates the total ACEs using built-in formulas within the Spreadsheet's cells.
- Proposes "set" or "fix" abandonment method assumptions to be used by all companies for future ACEs.
- Uses an assumption-based approach for calculating ACEs.
- Reflects unit cost values for each cost category by pipeline diameter and land use category. Some cost categories are reflected by commodity type (e.g., purging and cleaning, land remediation).
- Uses separate tabs in the Spreadsheet for:
    - post-abandonment monitoring and other post-abandonment costs;
    - "Special treatment" for reporting the total pipe length by crossing type and pipeline diameter that assumes special treatment (fill).
    - "Above-ground facilities" to report costs by facility type (i.e., costs associated with abandoning meter stations, pump stations and compressor stations) and by land use category (excluding crossing categories);

- Calculates cost contingency as a percentage and bases it on the accuracy of cost estimates for each cost category.
- Treats costs in current-year dollars.
- Allows for salvage value for above-ground facilities and where pipeline is removed.

3.2 Discussion Papers

To provide context and have focused discussions on specific topics at the Technical Conference, Board staff drafted nine Discussion Papers, which explored the following topics:

Discussion Paper 1	Development of a Refined ACE Framework
Discussion Paper 2	Consultation and impacts to current and future land uses
Discussion Paper 3	Land use categories, descriptions, and definitions
Discussion Paper 4	Scope and methodology of land use studies
Discussion Paper 5	Potential refinements to abandonment method assumptions for land use categories
Discussion Paper 6	Inflation rate
Discussion Paper 7	Cost categories and unit costs for abandonment activities
Discussion Paper 8	Methodology for the application and derivation of contingency including insurance and taxes.
Discussion Paper 9	Salvage value

3.3 Written Submissions on the Discussion Papers

In advance of the Technical Conference, Participants were invited to file written submissions outlining their views on the Discussion Papers. We considered the input received and the responses to the questions posed in the Discussion Paper in crafting the objectives and discussion questions for each of the sessions at the Technical Conference.

Many Participants filed comments and a wide range of perspectives was presented. Some were general in nature, pertaining to the overall proposed Refined ACE Framework, while others were very specific on what works or does not work for them. We heard that the proposed Refined ACE Framework may not lead to more accurate ACEs. Some companies noted that consistency should not be the fundamental goal of a Refined ACE Framework. Most companies felt that there remains a need for sufficient flexibility to account for company- or pipeline-specific characteristics and, therefore, a one-size-fits-all approach will not work. Reservations were expressed about using an Excel Spreadsheet with fixed formulas that cannot be adjusted to provide flexibility.

Generally, companies supported and committed to establishing the most precise ACEs possible. Board staff appreciated the time Participants took to provide feedback to help advance the cost estimates process.

4 TECHNICAL CONFERENCE

Board staff held the Technical Conference from 21-24 November 2017, during which time companies (Group 1 and 2 representatives), landowner associations, and NEB staff exchanged ideas about how to refine and advance the Refine ACE Framework. Ahead of the Technical Conference, an agenda was released outlining the technical session topics and objectives.

The topics explored at the Technical Conference were:

1. Land Use
    a) Land Use Categories
    b) Land Use Studies
2. Abandonment Method Assumptions
3. Consultation Activities
4. Cost Categories I
5. Cost Categories II
    a) Contingency, including taxes and insurance
    b) Inflation rate
    c) Salvage Value
    d) Carrying Charges

Sandy Lapointe, Executive Vice President, Transparency and Strategic Engagement at the NEB, provided the opening remarks, followed by Board staff providing an overview and background on the ACE review process.

Each technical session started with a presentation from Board staff. Presentations included an overview of relevant comments received on the Discussion Papers, the objectives for each session, and questions for discussion by Participants. The Technical Conference's informal structure allowed Participants and Board staff to openly discuss ways to improve and refine the current ACE Framework.

4.1 Objectives

The objectives of the Technical Conference were to:

- provide Participants with an opportunity to raise questions and clarify their written submissions on the Discussion Papers and the draft Refined ACE Framework;
- allow Participants to discuss possible changes or refinements to assumptions and methodologies regarding ACEs, where possible;
- provide Participants with an opportunity to explore, in some depth, the rationale and merits of alternatives suggested by other Participants;

- allow Board staff and Participants to ask questions to facilitate discussion on the topics to be discussed; and
- develop requirements and guidance for future filings to achieve consistency, where possible.

In its letter dated 16 August 2017, the Board noted that the merits of the Group 1 ACE Review 2016 filings would not be discussed at the Technical Conference and that the Board would assess those filings separately. Further, the Board stated that any outcomes of the Technical Conference would not be used to assess the ACE Review 2016 filings. The Board released its decision for the Group 1 ACE 2016 filings on 18 April 2018.

4.2 Additional Views

Subsequent to the Technical Conference, Participants were given the opportunity to file any additional views to those expressed in their written comments or during the conference itself.

Some Participants provided such comments. These can be found in the online Review of Abandonment Cost Estimates 2016 regulatory documents folder. Comments received are reflected in the summary notes in Section 5 of this report.

4.3 Draft Technical Conference Report

Board staff solicited comments from Participants on the draft Technical Conference Report. Submissions were received from TransCanada Pipelines Limited (TransCanada), Alliance Pipeline Ltd. (Alliance), the Canadian Association of Energy and Pipeline Landowner Associations (CAEPLA), and Union des producteurs agricoles (UPA). We considered all the comments and feedback received and the revisions are reflected in the relevant sections of this final report.

5 TECHNICAL CONFERENCE NOTES

5.1 Session Topic: Land Use Categories

5.1.1 Background

In Discussion Paper No. 3, Board staff identified several issues in companies' ACEs regarding land use categorization, including a lack of clear land use category definitions, a lack of transparency in land use categorization, and variability in land use categorization by different companies. To address these issues and provide greater accuracy, consistency, and transparency in companies' approaches to classifying and reporting land use in an ACE, Board staff proposed the use of standardized land use and crossing categories and sub-categories, and developed definitions for each (Sections 4.1 and 4.2 of proposed User Guide).

5.1.2 Session Objectives

This session was set up to identify:

- the function of each land use and crossing category and sub-category in estimating abandonment costs;
- which categories and sub-categories, if standardized, would lead to improved accuracy, consistency, and transparency of ACEs;
- which categories and sub-categories are problematic and the reasons why, and to brainstorm alternative methods for accounting for the costs in an ACE; and
- any concerns related to the proposed definitions/descriptions for the land use and crossing categories, and to brainstorm alternative wording, as needed.

5.1.3 Summary

Participants were generally supportive of establishing standardized land use and crossing categories and sub-categories, as well as standardized definitions for each, to increase consistency of companies' ACEs.

Several companies noted that they preferred using the land use categories and sub-categories in the Base Case tables. They were of the view that Board staff's proposed new sub-categories were too precise and would not increase the accuracy of their ACEs since ACEs are preliminary in nature with inherently wide accuracy ranges. Such preliminary ACEs are necessarily shaped by broad assumptions, with the science regarding abandonment still evolving. It was further indicated that the proposed sub-categories do not align with current publicly available data sources. A three-part test was suggested for determining the appropriateness of each proposed sub-category:

1. Will the category/sub-category result in a different abandonment method?
2. Will the resulting level of precision develop a better estimate?
3. Will it be worth the effort?

Participants generally agreed that the proposed sub-categories in the "Agricultural" category are appropriate. However, one company suggested that, since the Base Case abandonment method assumptions are the same for both the "Agricultural, Cultivated" and "Agricultural, Non-Cultivated" sub-categories, there is no need to differentiate between these sub-categories.

Landowner associations suggested that the sub-categories should consider maple stands and timber harvesting areas on private and public lands, and indicated that the definitions should be developed in consultation with landowners to ensure that differences in agricultural practices across Canada are understood. Several Participants made suggestions regarding the sub-category definitions, including basing the definitions of "Agricultural, Cultivated" and "Agricultural, Non-Cultivated" on whether lands are tilled or not, and linking the definition of "Agricultural, Cultivated with Special Features" to the criteria in the Board's *National Energy Board Pipeline Damage Prevention Regulations – Authorizations*.

Concerns were raised regarding the proposed sub-categories for the "Existing Developed Lands" category. Several companies noted that the proposed sub-categories (high/low density) would add complexity to the ACE process, be expensive, and not be meaningful since the abandonment method assumptions are the same for both proposed sub-categories. It was noted by some Participants that operational pipeline rights-of-way in urban areas are comprised of both green space and developed areas, such as parking lots and road crossings, and that the proposed sub-categories and their definitions do not consider that appropriately. As well, there were differing views among Participants as to whether the definitions for this category should consider a right-of-way's development potential upon abandonment.

Participants indicated that there are challenges with the "Prospective Future Development" category and proposed sub-categories, with several companies stating that, as a whole, the category is a challenge and somewhat speculative. Several companies indicated that they did not support the proposed sub-categories for this category, and suggested that the type of development is not relevant. Companies noted that there is a lack of clarity as to whether this category should reflect lands with current development plans or development plans at the time of abandonment. Further, some companies questioned whether knowledge of current development plans are meaningful for ensuring funds are sufficient at the time of abandonment. Several suggestions were made, including considering this category closer to the time of abandonment, considering these areas as part of the "Existing Developed Lands" category, or adding a post-abandonment provision to account for prospective future development.

Landowner associations were of the view that the sub-categories for the "Prospective Future Development" category need to be sufficient to ensure enough funding is set aside for prospective future development and that the funds are collected now, rather than closer to the time of abandonment. One group stated that the proposed additional sub-categories provide exactness to an ACE and ensure companies are thinking ahead.

There were varied views as to whether "Timber Harvesting Areas" should be included as a sub-category of the "Prospective Future Development" category. One landowner association supported this inclusion since it was of the view that a different abandonment method assumption would be appropriate for this sub-category. One company suggested that timber

harvesting areas should be considered with all other forested areas as part of the "Non-Developed Lands, Forested Lands" sub-category.

One company noted that the proposed categories and sub-categories do not consider permafrost areas, since one of its pipelines crosses permafrost lands for its entirety. It suggested that the Base Case "Environmentally Sensitive Areas" category should be reconsidered for inclusion in the Refined ACE Framework going forward. It also suggested that the protected areas listed in the proposed definition for the "Protected Areas" category, as well as wetlands and culturally sensitive areas, could be included in an "Environmentally Sensitive Areas" category.

Several companies did not support the proposed sub-categories for the "Non-Developed Lands" category, noting that there is no distinction between the sub-categories from an abandonment method assumptions perspective.

With regard to the proposed crossing sub-categories, some Participants indicated that the level of categorization was too granular or that the sub-categories could be organized or defined differently. For example, one company indicated that further delineation of the Base Case "Roads and Railways" sub-category into the proposed sub-categories would not be helpful for deriving its ACE. Another company suggested that watercourse crossings, peatlands, and wetlands should be in the same category as there would be no differences in abandonment method assumptions.

Several companies suggested that wetland crossings should not be accounted for as a "Crossings" sub-category, but rather in a land use category such as "Environmentally Sensitive Areas," since the costs related to pipeline segmentation for protecting wetlands are accounted for in the abandonment in-place costs in an ACE, and special treatment would not be applied at the time of abandonment.

Finally, one Participant suggested including a dedicated category for transmission corridors, noting that these areas have unique abandonment method considerations.

5.2 Session Topic: Land Use Studies

5.2.1 Background

In Discussion Paper No. 4, Board staff noted that each company has taken a unique approach to conducting the land use analysis supporting its ACE. Approaches differed in the land use study methodologies used by companies to categorize pipelines and verify their results, the factors considered, and the types of information and data sources used. It was also noted that the Board has not issued any specific guidance to companies as to how companies should conduct their land use studies in support of their ACEs, including an appropriate scope and methodology. To work towards greater clarity and consistency in companies' approaches to conducting land use studies, Board staff proposed a common approach for conducting them in Appendix 2 of the User Guide.

5.2.2 Session Objectives

This session was set up to identify:

- the features of field-based and desktop assessment techniques that best support a standardized method of land use categorization;
- the most appropriate information/data sources for delineating each category and sub-category; and
- any differences in scope and requirements between an initial land use study and a land use study in support of a subsequent ACE.

5.2.3 Summary

Participants had varying views regarding Board staff's proposed land use study guidance.

Several companies indicated that the proposed guidance was too precise and prescriptive since ACEs are preliminary estimates and based on the use of arbitrary abandonment method assumptions. It was suggested that a one-size-fits-all approach would not work due to the unique features of companies' pipeline systems and surrounding land use characteristics. Several companies suggested that clear land use study goals be developed, including baseline and timeline expectations, and that it be left to individual companies to determine how best to meet those goals. They noted that it would be each company's responsibility to justify to the NEB the methodology used.[1]

Landowner associations were of the view that land use study requirements should be clearly identified and, if land use studies were not of an appropriate quality (e.g., lack of clarity, gaps in data, uncertainty), the NEB should ask for the study to be re-filed. They were supportive of adding a contingency to an ACE to account for a poor-quality land use study.

Several companies supported using publicly available data (e.g., Natural Resources Canada [NRCan] data) to conduct land use studies and recommended including these data sources in the proposed land use study guidance. One company was of the view that this type of data, supplemented with spot checks and consultation, would improve accuracy and transparency of land use studies. However, it also noted that there are challenges with finding publicly available data sets that cover its entire pipeline system, and indicated that these types of data sets may not be updated frequently. It further suggested that the frequency of updating land use studies should be aligned with when publicly available data sets used by a company are updated.

One company suggested that the imagery requirements in the proposed User Guide be reflected as pixel resolution and positional accuracy, rather than scale. It indicated that a one-metre or greater pixel resolution is appropriate when conducting land use studies. Another company noted that monitoring zoning changes, surveillance, and class change is instrumental for understanding land use change.

[1] See UPA's comments dated 18 May 2018.

Landowner associations were of the view that companies should continue to conduct land use studies every five years since, from a landowner's perspective, land use changes over time. Landowner associations also raised concerns with companies' suggestion of continued use of publicly available data sets for conducting land use studies since the frequency of updating these data sets is unknown. They further noted that, while desktop assessments are important, companies cannot rely solely on maps and data sets to understand land use changes, noting that field assessments and consultation with landowners and stakeholders are key. It was noted that companies must find a way to include in their ACEs information gathered during consultations.[2]

5.3 Session Topic: Abandonment Method Assumptions

5.3.1 Background

In Discussion Paper No. 5, Board Staff noted that, in some cases, companies were using different abandonment method assumptions in their ACEs than those provided in Base Case Table A-2, or were using approaches to determine their ACEs that were not assumption-based. To increase transparency and consistency in companies' approaches to applying abandonment method assumptions to the land use and crossing categories and sub-categories, Board staff proposed to "fix" the assumptions. Board staff also developed a list of supporting assessments and information (Appendix 3 of the User Guide) that companies would file with their future ACEs to help the Board assess, over time, the continued appropriateness of the "fixed" assumptions.

5.3.2 Session Objectives

This session was set up to:

- brainstorm appropriate "fixed" abandonment method assumptions for each land use and crossing category and sub-category in the proposed framework;
- identify any circumstances where use of a "fixed" abandonment method assumption will be problematic or is not desirable, and the reasons why; and
- identify the supporting assessments and information that should be included in ACEs going forward.

5.3.3 Summary

Participants had varying views regarding what is an appropriate abandonment method assumption for each land use and crossing category/sub-category, as well as whether the assumptions companies use to prepare their ACEs should be "fixed."

Several companies noted that, while they supported "fixing" Base Case assumptions, they were of the view that they should have the flexibility to apply company-specific abandonment method assumptions, where necessary, to their ACEs.

[2] See UPA's comments dated 18 May 2018.

Landowner associations indicated that removing pipe at the time of abandonment is required, regardless of land use, to protect landowners' interests, because the effects of leaving the pipe in-place are unknown. For pipelines that remain in-place, one landowner group was of the view that ACE funding must account for costs to maintain the pipeline in perpetuity, including cathodic protection. In response to landowner associations' concerns, some companies were not supportive of abandoning pipelines in-place with cathodic protection, and one company noted that it has very little pipe that would require cathodic protection upon abandonment as a result of terms in its contractual agreements.

Landowner associations were also of the view that, for transparency and clarity, companies' ACEs should reflect the terms of contractual agreements with landowners and ensure the funds set aside for abandonment are sufficient, rather than relying solely on ACE abandonment method assumptions. They stated that, if pipeline removal is specified in an agreement, then the costs related to that abandonment method should be reflected in a company's ACE.

Another company stated that funds in an ACE will be sufficient at the time of abandonment as a result of the abandonment method assumptions applied to "Agricultural" lands. In response, one landowner group raised concerns that there may be underfunding of an ACE if companies rely on the funds set aside for pipe removal in the "Agricultural, Cultivated" and "Agricultural, Non-Cultivated" sub-categories (20% removal Base Case abandonment method assumption) to account for potential removal in other land use categories for which the abandonment method assumption is 100% abandonment in-place.

For the "Agricultural" category, most companies indicated that the Base Case abandonment method assumption of 80% abandonment in-place and 20% removal continues to be appropriate for the "Agricultural, Cultivated" and "Agricultural, Non-Cultivated" sub-categories. Some companies noted that recent research undertaken by the Pipeline Abandonment Research Steering Committee (PARSC) indicates that pipe corrosion will take thousands of years and any resulting subsidence would be muted, but also acknowledged that there are knowledge gaps that continued research and experience will help lessen. One company suggested that the abandonment method assumptions for these sub-categories be changed to 100% abandonment in-place for small diameter pipe. The landowner associations were not supportive of the current Base Case abandonment method assumptions for these sub-categories. They advocated for an assumption of 100% removal for all of the "Agricultural" sub-categories, as well as for maple stands, forest (private lands), and timber harvesting areas on private lands since, in their view, landowners will continue to bear risks and liabilities if pipe is left in-place.

One company suggested that the "Agricultural, Cultivated with Special Treatment" sub-category is not required since the pipe will be monitored post-abandonment. Another company was of the view that the abandonment method assumption for this sub-category should be based on the depth of cover over the pipe.

For the "Existing Developed Lands" category, several companies supported the continued use of the Base Case abandonment method assumption of 100% abandonment in-place. One company suggested adding a small amount of removal (e.g., 2%) to the abandonment method assumption for the overall category to account for potential removal costs at the time of abandonment.

Another company noted its recent experiences with removing abandoned pipe within the City of Lloydminster to accommodate road repairs. It indicated that it was very difficult to remove pipe at these locations due to the surrounding development. Further to this point, another company suggested that, if a removal percentage was included by the Board in the abandonment method assumptions for the proposed sub-categories (high/low density), then the unit costs for each sub-category would be different as a result of the higher construction costs in areas of higher congestion. Landowner associations suggested pipe removal as the abandonment method assumption for this category, noting that these lands will be sought after for future development.

For the "Prospective Future Development" category, several companies questioned whether the abandonment method assumption of 100% removal is necessary since, in their view, pipe removal may not be necessary for all prospective future development, particularly if a pipeline would not affect a planned development. However, another company voiced support for the current assumption, noting that it could be revisited later. Landowner associations suggested continued use of the Base Case abandonment method assumption for this category. One landowner group noted that timber harvesting areas are similar to agricultural lands, and reforestation and growth could be impacted by pipes left in-place.

Several Participants were supportive of the continued use of the Base Case assumption of 100% abandonment in-place for the "Environmentally Sensitive Areas" category and suggested its appropriateness for the proposed "Protected Areas" category as well.

For the "Non Developed Lands" category, several companies suggested changing the current abandonment method assumption (20% removal) to 100% abandonment in-place. They noted that the current assumption is overly conservative and pipe removal would do more harm than good in these areas since trees would need to be cut and disturbance should be avoided on native prairie. In contrast, one landowner association noted that some degree of removal may be required in these areas.

For the "Crossing, Watercourses" sub-category, several companies were of the view that the Base Case abandonment method assumption of 100% abandonment in-place remains appropriate. One company noted that adding fill should be minimized in these areas since pipe removal post-abandonment would be more difficult if the pipe has been previously filled.

Participants had varying views regarding abandonment method assumptions for road crossing sub-categories. One company suggested that the assumption for "Paved Road" and "Gravel Road" sub-categories should be 100% abandonment in-place with fill for all pipe diameters. Another company indicated that an assumption of abandonment in-place without special treatment should be applied to small diameter pipe, with special treatment being limited to larger diameter pipes. A landowner group suggested that removal should be considered in the abandonment method assumption for the "Gravel Road" sub-category since these types of roads may not have casing and the weight of agricultural equipment may be a concern.

For the "Crossings, Utility" sub-category, one company indicated that an abandonment method assumption of 100% abandonment in-place without special treatment is appropriate for all pipe size diameters, whereas another company suggested that the assumption should be 100% abandonment in-place with special treatment.

For the suggested "Transmission Corridors" category, one company noted that the current best management practice is to abandon pipelines in-place with cathodic protection, similar to an operating pipeline. One landowner group noted that transmission lines can induce voltage on nearby pipelines and suggested that 100% removal in these areas would be appropriate to reduce safety hazards.

Finally, Participants provided feedback on Appendix 3 (Supporting Assessments and Information) of the User Guide, with some companies noting that the information needs outlined in Section 2 of that appendix are onerous.

5.4 Session Topic: Consultation Activities

5.4.1 Background

Generally, in its engagement activities and initiatives, the Board has heard from landowners, Indigenous groups and stakeholders that they expect to be engaged throughout the lifecycle of a project, including the economic matters relating to the funds set aside for the eventual abandonment of a pipeline. Landowners stated that in previous ACE filings, companies did not provide enough information on how they made assumptions based on summaries of consultation activities undertaken with landowners, Indigenous groups and stakeholders.

In Discussion Paper No. 2, Board staff identified several issues in companies' ACEs regarding the level, manner and frequency of when landowners, Indigenous groups and stakeholder were consulted. To address these issues and provide greater accuracy, consistency and transparency in companies' approaches and future filings, the Board prepared consultation guidance in Section 2.3.1 of this Discussion Paper.

5.4.2 Session Objectives

The session was set up to:

- define who to consult with;
- determine when to consult and/or engage; and
- design a process for incorporating input received and how best to document it.

5.4.3 Summary

Several companies identified that, through their own consultation activities, landowners have identified issues related to capacity and accessing information. Companies have used a variety of broad-scale approaches – such as mail-outs, newsletters, website postings, etc. – to address these concerns.

Companies stated that their ongoing consultation is the most effective approach to collect relevant information from landowners, and that landowners want more transparency in how collected information is used and shared.

In light of this, Board staff proposed a draft consultation table (shown below) that could be used by companies when updating an ACE, and facilitated a discussion on the draft table and consultation activities in general. Staff noted that the Board's process is an important and necessary check on consultation and that the Board is open to ideas on how to facilitate meaningful consultation.

Draft Consultation Table

	Lifecycle phase			
	Operations and maintenance activities	Project-specific abandonment hearing	Project-specific abandonment activities	Post-abandonment activities
Concerns about abandonment (expressed by landowners, municipalities, Indigenous Peoples)				
Company response				
Implications for ACE (assumptions, land use categories, cost categories)				

Participants provided feedback to the effect that, compared to a narrative approach, the draft consultation table offers a better model for capturing the information required for future ACE reviews, and that the lifecycle approach provides an opportunity for higher-level discussions that may prove to be more helpful in future reviews. Participants also gave feedback that consultation requirements must be different for physical versus financial projects, and that the draft table provides opportunities to incorporate existing operational requirements, which may further validate company ACE assumptions. Landowner associations stated that the proposed table may be acceptable for companies to use, but companies still need to commit to consulting with landowners.

When asked how companies could demonstrate that their consultation activities contributed to and informed financial aspects of an ACE, several companies stated that the most appropriate time to consult is when abandonment is imminent for an individual landowner. However, others stated that relationships with affected groups should be firmly established well before abandonment, and that consultation should be tailored to the type of application being considered, where the scale and scope of consultation activities considers the appropriateness and proportionality of the decision being sought.

Landowner associations[3] stated that they have resources to assist and educate landowners, as well as the ability to participate in consultation activities to further meaningful dialogue between

[3] The UPA would like to clarify that it is an organization representing farmers and forest producers and advocates for their interests. Where possible, it strongly wishes to take part in and facilitate consultation activities, but cannot replace the NEB or the company. It wishes to play the role of facilitator. Moreover, it is essential that the NEB supervise companies' consultation activities. The NEB should also collaborate on outreach to landowners.

companies and landowners, as a solution to addressing the limited success that companies have had in engaging landowners. Landowner associations further stated that the Board should communicate any regulatory changes directly with landowners. This type of engagement activity would further enhance the Board's relationships with landowners.

The majority of Participants agreed that additional and focused NEB guidance relating to a consultation program for calculating and/or estimating costs would be beneficial for all involved.

5.5 Session Topic: Cost Categories I

5.5.1 Background

The current NEB Base Case cost estimates were developed in 2010 and may not reflect current and up-to-date costs and information associated with abandonment activities. Further, in Discussion Paper No. 7, the NEB identified that companies used different approaches in developing their 2016 ACEs, such as using different units of measurement, instances of combining different cost categories as single cost items, and assumptions used with respect to post-abandonment financial provisions and monitoring. These approaches, together with the use of NEB Base Case cost estimates, present challenges with respect to the transparency, reasonableness, and adequacy of the ACEs.

Features of the proposed Refined ACE Framework aim to address these issues by establishing transparency for cost category unit cost estimates, achieving consistency where practicable in developing unit cost estimates, and ensuring that the NEB Base Case cost estimates are current, reasonable, and adequate.

5.5.2 Session Objectives

The session was set up to:

- review approaches to revise the NEB Base Case cost estimates; and
- identify areas where unit cost estimates can be refined for consistency and improved accuracy.

5.5.3 Summary

Participants expressed views on various matters with respect to unit costs associated with pipeline abandonment activities. At the outset of the session, one landowner group stated that ACEs should reflect and capture the costs associated with abandonment activities (e.g., pipeline removal, based on current contractual agreements between companies and landowners). It was further stated that perpetual maintenance and cathodic protection should be included in the ACEs for pipelines that will be abandoned in-place.

On matters of standardizing the unit cost estimates and units of measurement, several companies stated that unit costs need to represent specific and unique characteristics of a company's pipeline system and, therefore, an approach towards standardizing the unit costs may lead to

inaccurate ACEs. Companies said that synergies that can result in cost efficiencies with respect to land access costs, such as instances of common pipeline corridors or the presence of multiple pipelines in a single right-of-way, may be impractical to capture in a standardized approach. Several companies also stated that company-specific units of measurement for unit cost estimates (e.g., above-ground facilities and crossings) remain the best approach in developing accurate ACEs. On the same matter, other Participants stated that cost categories for the unit cost estimates should be explicit and standardized to the extent possible in order to achieve transparency and provide comparability among companies' ACEs. One company stated that the proposed level of detail in associating land use categories with cost categories (abandonment activities) may be problematic in developing ACEs.

On matters of revising the current NEB Base Case cost estimate values, Participants generally agreed that, while these values serve as a valid approach and provide guidance in developing ACEs, particularly for Group 2 companies, the values may be dated as they are over seven years old and have not been revised since the time they were established. Several Participants suggested revising the NEB Base Case cost estimate values, including updating the values to 2017 dollars based on inflation rates since the time they were developed, and using Group 1 companies' 2016 ACE submissions to set a range of values.

With respect to the duration of the post-abandonment monitoring period and the associated unit cost estimates to address monitoring and post-abandonment events, several companies noted that the current NEB Base Case assumptions are conservative, adequate, and result in reasonable estimates. Landowner associations noted that perpetual monitoring is necessary to ensure that landowners bear no responsibility for costs to address events that may occur in the post-abandonment period. They further noted that agricultural practices, such as zero tillage, are being encouraged to mitigate climate change impacts and that this should be factored into ACEs.

5.6 Session Topic: Cost Categories II

5.6.1 Contingency/Taxes and Insurance

5.6.1.1 Background

In MH-001-2012, the Board encouraged Group 1 companies to work towards a more transparent and rigorous approach in calculating contingency, collaboratively develop a consistent approach to contingency that is suitable for all companies, and consider the necessity of taxes and insurance in future estimates.

In Discussion Paper No. 8, views were sought with respect to the concept of linking the class estimate of an ACE to the contingency, applying a contingency to individual cost categories, and having the Board set the contingency factors to be used in an ACE based on the class estimate and range of accuracy.

5.6.1.3 Session Objectives

This session was set up to:

- establish how the Association for the Advancement of Cost Engineering International (AACEI) guidelines should inform revisions to NEB Base Case contingency factors and methodology;
- evaluate how applying contingency to individual cost categories impacts ACEs; and
- further the understanding of the treatment of taxes and insurance, including in the post-abandonment period.

5.6.1.4 Summary

Several companies stated that contingencies are already built into each unit cost estimate and that it is industry best practice to apply contingency to overall cost estimates since contingency is considered at the project level and not for individual project activities. They also stated that a breakdown of contingency for each unit cost is less meaningful and will not provide further information on the costs, nor result in a more accurate ACE.

Further, several companies stated that the contingency is intended to mitigate the risk of under-collecting funds, which can be addressed through periodic reviews. They also noted that the contingency and confidence level/classification of ACEs are separate concepts that are delinked and, therefore, establishing a range of contingencies based on an ACE's classification is impractical.

Most companies stated that they included sales taxes in their unit costs because they do not flow back to the company. Companies were of the view that it is a small component of unit costs. Several Participants stated that property tax ceases when operations cease. One company pointed out that there could be some lag time for this to come into effect. Participants mentioned that there may be some changes in the future with regard to property taxes. One company suggested that, until some policies change and until the next ACE review, property taxes could be reflected in contingency. Another company stated it captured property taxes in the project management cost category.

Most companies were of the view that insurance during abandonment activities is covered by a company's blanket policy. However, they were not certain about post-abandonment insurance and thought it might be the same. If not, this may be something that may need to be changed later. Companies agreed that, for transparency, there could be a note about insurance costs in the ACE[4].

[4] See UPA's comments dated 18 May 2018.

5.6.2 Inflation/Escalation Rate

5.6.2.1 Background

Discussion Paper No. 6 examined inflation rates, including the observed inconsistencies among companies' 2016 ACE filings. In RH-2-2008, the Board had set an inflation rate expectation of 2% per year. This relied on the Bank of Canada's inflation target and the Board indicated it would revise the inflation rate estimate when warranted. As part of the Technical Conference, the Base Case inflation rate was discussed, including the merits of consistency among a number of different inflation methodologies.

5.6.2.2 Session Objectives

The session was set up to:

- develop an approach or approaches for updating unit costs to the current year dollars for the next ACE review; and
- review the appropriateness of the 2% Base Case inflation rate until the next five-year review.

5.6.2.3 Summary

Several companies were of the view that using real cost data was a good approach. The information gained from specific activities or work could be relevant to determining this cost data. In addition, some information could come from third-party consultants.

One company stated that its experience was that a cost consultant did not work, did not provide improved information (e.g., the company has better in-house information), and was costly. Another company noted that the risk of using only an inflation rate was that underlying activities and costs could have different inflation and, over time, it could become disconnected with underlying unit costs. It was noted that, while using only an inflation rate to update the ACE could be problematic, an inflation rate could be used when other information was not available. It was suggested that revisiting unit costs to ensure they were realistic and appropriate every two or three reviews would work.

For Group 2 companies, using an inflation rate or updated Base Case unit costs could be the default. Most companies agreed that the Base Case unit costs should be updated.

5.6.3 Carrying Charges

5.6.3.1 Background

The issue of the cost of carrying charges was not contemplated in MH-001-2012. However, the recovery of carrying charges has recently been brought to the Board's attention. MH-001-2013 discusses timing of access to funds, but did not specifically contemplate carrying charges. The Technical Conference provided Participants with an initial opportunity to comment on this topic in a transparent forum.

5.6.3.2 Session Objective

The session was set up to develop an approach or approaches to address the cost of carrying charges.

5.6.3.3 Summary

Several companies stated the Board needs to better define what is required as part of an application to access funds in a trust for decommissioning and abandonment activities. Companies were of the view that having carrying charges as a cost category in an ACE would probably not be needed if the time period was short between when an application was made to when approval to access the trust was granted. Several companies suggested that the Board could approve access to funds as part of the abandonment application rather than requiring a separate application. There were several proposals on how to access funds as part of an application.

Several Participants stated that carrying charges are a valid charge, like Allowance for Funds Used During Construction (AFUDC), but hard to predict. Landowners were in favour of allowing companies to collect carrying charges and suggested that the Board could advance some of the funds while withholding enough to ensure that work was done correctly.

The majority of Participants stated that carrying charges are an issue that needs to be addressed in the near term. Several companies stated that they are willing to provide cash flow profiles and volunteered to work with the Board to develop further guidance.

5.6.4 Salvage Value

5.6.4.1 Background

Discussion Paper No. 9 examined the topic of salvage value. In RH-2-2008, the Board set out a preliminary assumption of zero for the value of any facilities salvaged during abandonment activities. The Board reviewed this assumption and, in March 2010 letter, found that a zero salvage value remained appropriate, including for above-ground facilities. The Board did state that this assumption would be reviewed and could be revised in the future should new information arise. In the past, several companies have included salvage value as part of their ACEs, but most have used the conservative approach of zero.

5.6.4.2 Session Objectives

The session was set up to review the appropriateness of a 0% salvage value assumption until the next five-year review.

5.6.4.3 Summary

While it was noted that, in some cases, there may be value, or there may be an opportunity to redeploy the asset, Participants were of the view that the Base Case assumption of 0% was a conservative approach and agreed with maintaining that assumption when calculating the ACE.

One company was of the view that its salvage value on its above-ground facilities would be higher than other facilities and had, therefore, assumed that a 0% salvage value would not be appropriate. Some of the Participants agreed that there could be some salvage value for above-ground facilities, but were of the view that below-ground facilities should have a 0% salvage value.

Several companies stated that they may wish to review their salvage value assumption closer to abandonment, and that the risk of under-collection due to assuming a salvage value other than 0% could be managed with periodic reviews.

6 PROPOSED NEXT STEPS

Board staff would like to thank all Participants for providing valuable input and feedback through their written submissions on the Discussion Papers, for actively participating at the Technical Conference, and for providing comments on the draft Technical Conference Report.

In finalizing the Technical Conference Report, we considered all comments that Participants provided on the draft report. We appreciate the feedback and proposed revisions, corrections to, and further explanations about statements made by the Participants.

We note that the Board's ACE review process is evolving, and we will continue to collaborate with Participants and all interested persons in refining and advancing the current ACE Framework. One of the objectives of the Technical Conference was to work towards developing filing requirements and guidance to achieve consistency, transparency, and accuracy for future ACE reviews. The Board intends to initiate a process in advance of the next ACE review that will involve developing filing requirements. Details will be provided at a later date.

APPENDIX 1: LIST OF TECHNICAL CONFERENCE PARTICIPANTS

- Alliance Pipeline Ltd.
- Canadian Association of Energy & Pipeline Landowners Association (CAEPLA)
- Enbridge Pipelines Inc. and Enbridge Pipelines (NW) Inc.
- Kinder Morgan Cochin ULC and Kinder Morgan Utopia Ltd.
- Maritimes & Northeast Pipeline
- Plains Midstream Canada
- Trans Mountain Pipeline ULC
- TransCanada PipeLines Limited
- Trans-Northern Pipeline Inc.
- Union des producteurs agricoles (UPA)
- Westcoast Energy Inc. doing business as Spectra Energy Transmission

APPENDIX 2: TECHNICAL CONFERENCE AGENDA

Abandonment Cost Estimates Review - Technical Conference

Tuesday, 21 November 2017[1]

8:30am	**Registration**
9:00am	**Introduction and Welcome – DPRA**
9:05am	**Opening Remarks** ***Sandy Lapointe**, EVP, Transparency and Strategic Engagement, National Energy Board*
9:10am	**Project Overview and Background** ***Usha Mulukutla**, Project Manager, National Energy Board* ***Heather Tilley**, Assistant Project Manager, National Energy Board*
Session 1 **9:20am**	**Land Use** *Lead: **Sandra Kerkhof**, Environmental Specialist, National Energy Board* **Topics:** • Categories, definitions and descriptions **Objectives:** • Identify the function of each land use and crossing category and sub-category in estimating abandonment costs • Identify which categories and sub-categories, if standardized, would lead to improved accuracy, consistency and transparency of ACEs • Identify which categories and sub-categories are problematic and the reasons why, and brainstorm alternative methods for accounting for those costs in an ACE • Identify concerns related to the proposed definitions/descriptions for the land use and crossing categories (see Section 4.0 of the proposed User Guide) and brainstorm alternative wording, as needed
10:30am	**Health Break**
10:45am	**Land Use (Session 1 continues)** **Topics:** • Categories, definitions, and descriptions
11:45am	**Lunch Break**

[1] Specific dates and times for each session for the Technical Conference are subject to change. Break times throughout the day are flexible

1:00pm	**Land Use (Session 1 continues)** **Topics:** • Land use studies: scope and methodology **Objectives:** • Identify the features of field-based and desktop assessment techniques which best support a standardized method of land use categorization • Identify the most appropriate information/data sources for delineating each category and sub-category • Identify any differences in scope and requirements between an initial land use study and a land use study in support of a subsequent ACE
3:00pm	**End of Day**

Abandonment Cost Estimates Review - Technical Conference

Wednesday, 22 November 2017

8:45am	**Registration**
9:00am	**Welcome and Recap of Session 1 – DPRA**
Session 2 **9:10am**	**Abandonment Method Assumptions** *Lead:* ***Sandra Kerkhof****, Environmental Specialist, National Energy Board* **Topic:** • Abandonment method assumptions for each category **Objectives:** • Brainstorm appropriate "fixed" abandonment method assumptions for each land use and crossing category and sub-category in the proposed framework • Identify any circumstances where use of a "fixed" abandonment method assumption will be problematic or is not desirable, and the reasons why • Identify the supporting assessments and information that should be included in ACEs going forward (see Appendix 3 of the proposed User Guide)
10:30am	**Health Break**
10:45am	**Abandonment Method Assumptions (Session 2 continues)**
11:45am	**Lunch Break**
1:00pm	**Abandonment Method Assumptions (Session 2 continues)**
3:00pm	**End of Day**

Thursday, 23 November 2017

8:45am	**Registration**
9:00am	**Welcome and Recap of Session 2 – DPRA**

Session 3
9:10am
	Consultation Activities
	Lead: ***Anne-Marie Erickson****, Technical Leader, Land Matters, National Energy Board*
	Topics:
	• Approaches to mitigating impacts to current and future land uses
	• Consultation Program:
	  ○ Policy and goals
	  ○ Design
	  ○ Implementation
	  ○ Outcomes including record keeping
	  ○ Oversight and evaluation
	Objectives:
	• Define who to consult with
	• Determine when to consult and/or engage
	• Design process for incorporating input received and how best to document

10:30am	**Health Break**
10:45am	**Consultation Activities (Session 3 continues)**
11:45am	**Lunch Break**
1:00pm	**Consultation Activities (Session 3 continues)**
3:00pm	**End of Day**

Friday, 24 November 2017

8:45am	**Registration**
9:00am	**Welcome and Recap of Session 3 – DPRA**
Session 4 **9:10am**	**Cost Categories I** *Leads:* ***Tijani Elabor****, Engineer, National Energy Board* ***Keith Bolton****, Financial Regulatory Analyst, National Energy Board* **Topic:** • Underlying assumptions and unit costs for each cost category, including post-abandonment monitoring and unforeseen events, and above-ground facilities **Objectives:** • Review approaches to revise the NEB Base Case cost estimates • Identify areas where unit cost estimates can be refined for consistency and improved accuracy
10:30am	**Health Break**
10:45am	**Cost Categories I (Session 4 continues)**
11:45am	**Lunch Break**
12:45pm	**Registration for Session 5: Cost Categories II**
1:00pm	**Welcome and Recap of Session 4 – DPRA**
Session 5 **1:15pm**	**Cost Categories II** *Leads:* ***Tijani Elabor****, Engineer, National Energy Board* ***Keith Bolton****, Financial Regulatory Analyst, National Energy Board* **Topic:** • Contingency, including taxes and insurance **Objectives:** • Establish how AACEI guidelines should inform revision to NEB Base Case contingency factors and methodology • Evaluate how applying contingency to individual cost categories impacts ACE • Further the understanding of the treatment of taxes and insurance, including the post-abandonment period **Topic:** • Inflation rate **Objectives:** • Development of an approach(es) for updating unit costs to correct current year dollars for the next ACE review • Review the appropriateness of the two per cent Base Case inflation rate until the next 5 year review
3:00pm	**End of Day**

Monday, 27 November 2017[2]

Session 5 **9:00am**	**Cost Categories II (Session 5 continues from Friday, 24 November 2017)** *Lead:* ***Keith Bolton****, Financial Regulatory Analyst, National Energy Board* **Topic:** • Salvage value **Objective:** • Review the appropriateness of a zero per cent salvage value assumption until the next 5 year review **Topic:** • Carrying charges **Objective:** • Input on development of an approach (es) to address the cost of carrying charges
10:30am	**Health Break**
10:45am	Wrap-up of Technical Conference and concluding remarks

[2] It is possible that the Technical Conference is concluded on Friday, 24 November 2017.

APPENDIX 3: DETAILED SESSION NOTES

Session 1: Land Use

Tuesday, 21 November 2017

Part 1: Land Use Categories, Definitions, and Descriptions

Discussion questions:

1) Which land use and crossing categories and sub-categories have a function in accurately estimating an ACE?
   a) What are those functions? Do they assist in establishing:
      - amount of pipe to be abandoned in-place or removed?
      - amount of pipe to be filled?
      - the need for additional segmentation?
      - differences in unit costs due to land use?
      - other?
   b) Are there some categories and sub-categories which more meaningfully contribute to or add value to estimating abandonment costs than others?
      - If so, which categories do not contribute or only contribute in a limited way to an ACE? Why?
2) Would the use of a set of standardized land use and crossing categories by all companies for their ACEs improve accuracy, consistency and transparency of ACEs?
   a) If so, which categories and sub-categories should be included?
   b) If not, why is that expected?
   c) Are there other ways that consistency and transparency could be achieved, while still ensuring accuracy?
3) Which categories and sub-categories are problematic?
   a) Why are they problematic?
   b) Are there other ways to account for the costs in an ACE?

Notes:

Proposed framework

- Two fundamental principles: abandonment issues are legitimate and recoverable; and landowners are not liable for costs of abandonment. (CAEPLA)

- What is the basis of the driver for change of the proposed framework? Only about 30 abandonments since 1959, as noted by the Board, so not a lot of experience to rely on. (TransCanada)
- Land use is fundamental to developing an ACE. Categories established in 2008 when no one had experience or expertise regarding abandonment. Board's Base Case provides guidance/assumptions. Companies assume abandonment in-place except for land use categories that require removal. (Enbridge)
- There is evidence that shows that removal is required regardless of land use to protect interests of landowners. NEB has not been given the scientific evidence to protect the interests of landowners. Landowners should not bear costs of abandonment. (CAEPLA)
- CEPA is funding scientific research regarding abandonment through PTAC, which CEPA-member companies and the NEB are involved in. (Alliance)
- Until impacts are understood regarding abandonment in-place, pipelines have to be maintained into perpetuity or removed. PTAC research not complete or proven. CAEPLA's evidence in the 2008 proceeding was cross-examined. (CAEPLA)
- To change framework 16 months after revised ACE filings does not make a lot of sense. Unless there is a strong reason to change, do not do it. Goal is not to assess every metre of pipeline. We need experience and reasons before changing categories. Current ACE Framework is appropriate. (TransCanada)
- An ACE is a preliminary Category 5 estimate with an inherently wide accuracy range. Science is not totally proven. Precision will improve with time. (Alliance)
- Preliminary ACEs have issues. Board indicated that companies should consult with landowners for ACEs to identify site-specific issues, but that has not happened. Companies know that they need site-specific information. (CAEPLA)
- Proposed a three-part test for adding sub-categories to existing categories. Will adding sub-categories:
    - Result in different abandonment method?
    - Level of precision develop a better estimate?
    - Difference in precision be worth the effort? (Enbridge)
- Consultation with landowners is required, and abandonment methods in contractual agreements between companies and landowners need to be considered in ACEs. Landowners rely on contracts and NEB needs to recognize this. Many current agreements do not allow for abandonment in-place. (CAEPLA)
- If pipelines are going to be left in-place, we need the sub-categories proposed because we may need those categories in the future. As landowners, they do not want to take risks or bear costs. (UPA)
- The nature of land agreements is speculative. (TransCanada)
- Base Case categories are helpful. (Enbridge)
- Changes in unit costs by land category/sub-category will not have too much impact to value of overall ACE. Changes in abandonment assumptions have a greater impact to the value of an ACE. It would expect a range of unit costs associated with different sub-categories, but mid-point or average unit cost should be reasonable for deriving ACE. For

example, the proposed crossing sub-categories would add additional cost but no benefit to ACE. (TransCanada)

- Sub-categories need to align with government data (e.g., NRCan data). Use of NRCan data, supplemented by spot checks, rather than relying just on company data will help improve accuracy and transparency. However, use of the proposed sub-categories would preclude using NRCan data, and result in greater subjectivity. (TransCanada)
- Consultation with landowners will enhance existing data sources (e.g., NRCan data).
- Standardized categories and a common language (definitions) will increase accuracy, consistency and transparency. (CAEPLA)
- Adding more categories does not add more precision. Experience and learning will help to inform future assumptions. (TransCanada)

Category-specific responses

"Agricultural" category

- The agricultural sub-categories are good. (CAEPLA)
- There is confusion with cultivated and non-cultivated terms. Does the NEB have a clear definition of these terms? Maybe use tillage? Works well when categorizing using imagery assessment. (Trans Mountain)
- Since the NEB assumes 20% removal for both sub-categories, the difference between "cultivated" and "non-cultivated" sub-categories is irrelevant. (Alliance)
- A clearer definition of the special features of agriculture land is needed as practices may be different across regions. Clear definitions are necessary for all agriculture sub-categories. Standardization will help understanding. For example, deep tilling can be done differently across Canada. (UPA)
- Special features, as defined in the User Guide, will provide a common understanding. (CAEPLA)
- Deep tilling should be linked to special features category to ensure landowner safety. Supportive of definition being linked to Damage Prevention Regulations, as proposed. Consultation with landowners and landowner associations key to ensuring definition appropriate. (CAEPLA)
- Consultation required with landowners to understand differences between "cultivated" and "non-cultivated" sub-categories.
- Private forested lands should be considered in this category, in contrast to other forested lands in the "Undeveloped Lands" category, since there are certain peculiarities associated with maple stands versus conventional forested lands. (UPA)

"Existing Developed Lands" category

- While changes are warranted to the framework, high/low density sub-categories are not meaningful and add complexity to ACE process. (TransCanada)

- If the abandonment method for high and low density sub-categories are not different, unit costs for each would not likely be different either since access requirements for abandonment in-place are limited. However, if the abandonment assumptions for the sub-categories are different than abandonment in-place, then costs may be different in areas of high congestion. Noted that Board-imposed 20% removal assumption for Agricultural lands provides contingency for these types of cost differences. (Enbridge)
- Additional sub-categories are expensive and may not be useful. It would be simple, for example, to add 2% (or other amount) removal to abandonment method assumption for overall category, like have done for Agricultural land categories, rather than have new sub-categories. (TransCanada)
- Wetlands are not farmable lands and are protected in Quebec. They should not be included in the "Agricultural" category. (UPA)

"Prospective Future Development" category

- Sub-categories not needed. The category is a challenge. Prospective future development today is not what will be prospective future at the time of abandonment. Category should be based on what's known today, not that predicted at time of abandonment. (Enbridge)
- One cannot predict development in the future, so need to consider prospective future development today to accrue enough funds for prospective future development that will occur at the time of abandonment. "Agricultural, Cultivated with Special Features" sub-category is similarly important. (CAEPLA)
- Hard to make predictions with an uncertain future. Future development cannot be predicted beyond five years, but city limits will expand into agricultural and forested areas. Pipe will change categories over time (e.g., from "Prospective Future Development" to "Existing Developed Lands"). Noted that many areas in Canada have timber harvesting, but abandonment method assumptions should be similar for private forested lands (i.e., complete removal). (UPA)
- Need reasons for more sub-categories. Future development matters, but type of development does not. Consider putting timber harvesting in "Forested Lands" sub-category. (TransCanada)
- Sub-categories should identify risks as a result of an abandoned pipe and the applicable costs. (CAEPLA)
- Definition for "Timber Harvesting Areas" sub-category should include a list of relevant species and products (e.g., paper). Consider a table format. (CAEPLA)
- Timber harvesting definition should include all types of wood. (UPA)

"Crossings" category

- Further delineation between roads and railway category will not be helpful. (Enbridge)
- Water crossings, peatlands and wetlands should be in the same category since there is no difference in abandonment method assumption and overall ACE. (Enbridge)

- Roads and railways should be in the same category since no difference in abandonment method assumption and overall ACE. (Enbridge)
- From a farmer's perspective, there should be a sub-category for gravel roads since agriculture equipment travels on these roads. (CAEPLA)
- The "Crossings, Utilities" sub-category should include both underground and above-ground utilities. Abandonment method assumption should be special treatment. (Trans Northern)
- Favours crossing the sub-categories in current framework. (Alliance)
- Wetlands are under federal jurisdiction and those representatives are not present at Technical Conference. Suggested that they should be involved with abandonment issues. (CAEPLA)

Suggested categories/sub-categories for inclusion

- Need to include the "Environmentally Sensitive Areas" category from current Base Case, as part of any new framework since the entire Norman Wells line is in permafrost. Suggested including national and provincial parks, ecological reserves, regional sensitive areas, wetlands and permafrost areas in the definition for the "Environmentally Sensitive Areas" category. (Enbridge)
- Culturally sensitive areas could be included the "Environmentally Sensitive Areas" category. (Enbridge)
- Environmentally protected lands could be included in "Environmentally Sensitive Areas" category. (UPA)
- Transmission corridors should be a dedicated land use category. Current best management practice (in easement agreements) is to maintain abandoned pipeline into perpetuity like an operating pipeline so no risks. (Trans Northern)

Part 2: Land Use Study Scope and Methodology

Discussion questions:

1) What are the most appropriate analysis techniques for categorizing land use which support a common or standardized approach?
    - Desktop assessment using:
        - visual interpretation of imagery?
        - available digital data, reports and consultation information?
    - Field-based assessment?
    - Combination of above?
    - Should the techniques used vary depending on the category or sub-category being classified?

2) What common types of information/data sources and/or consultation could best be used to categorize land use?
    - How do they align with the techniques identified in response to Question 1?
    - Are there specific parameters required to make them appropriate (e.g., age of data, scale, and coverage)?
    - Is some of the information available as a result of land use monitoring requirements of section 42 of *National Energy Board Onshore Pipeline Regulations* (Class Location) and section 16 of DPR – Obligations of Pipeline Companies?
    - How any data limitations data or information gaps should be best addressed?

    7 Section 42 of the *National Energy Board Onshore Pipeline Regulations*:

    > If the class location of a section of a pipeline changes to a higher designation that has a more stringent location factor, the company shall, within six months after the change, submit the proposed plan to deal with the change to the Board.

    8 Section 16 of the *NEB Damage Prevention Regulations – Obligations of Pipeline Companies:*

    > The damage prevention program that a pipeline company is required to develop, implement and maintain under Section 47.2 of the *National Energy Board Onshore Pipeline Regulations* must include:
    >
    > …
    >
    > (b) ongoing monitoring of any changes in the use of the land on which a pipeline is located and the land that is adjacent to that land;
    >
    > …

3) What are appropriate QA/QC requirements when using desktop assessment techniques?
4) Is the proposed guidance for a land use study in Appendix 2 of the User Guide appropriate? What changes should be made?
5) If standardization is not possible or desirable, what guidance could be developed to provide flexibility to companies to choose different data sources or analysis techniques, but still ensure accuracy and transparency?
6) How should the scope and requirements of an initial land use study differ from subsequent land use studies (e.g., scope of study, information sources relied on, analysis techniques used)?

Notes:

- Contractual agreements are imperative since they are legal obligations. There is a lack of transparency and clarity if not considered in ACEs. (CAEPLA)
- Land use requirements in proposed framework are moving away from ACE and are closer to what they would need to file in support of an abandonment application. Land use studies conducted every five years is too much. Spot-checks would be better since land use does not change much. Suggested that land use studies not be conducted every 5

years. Land use studies should be updated when land use data is updated (e.g., NRCan data). (TransCanada)

- Landowner perspective is different – land use changes. Land use studies should be conducted every five years. Twenty years is too long. (CAEPLA)
- Field based assessments are important to examine how land is used. For agriculture, land use can change dramatically in five years. Desktop assessments are not adequate on their own and must be enhanced by information from landowners. NRCan does not have that data. For example, a company cannot find information regarding privately owned forests on maps. They need to obtain that land use information from landowners. (UPA)
- If contractual agreements in place for removal, cathodic protection or perpetual maintenance, then land use categorization is secondary. Need to protect land value and landowner needs. Funding should reflect those needs. (CAEPLA)
- Land use studies determines assumptions for unit costs. A metre-by-metre level of precision is not needed for cost estimate. May be more or less removal at time of abandonment. This just an estimate, not an actual abandonment. (TransCanada)
- Need to be asking if the system we have in place for doing land use studies is adequate for ACE. With large pipeline systems, the averaging effect makes precision more irrelevant. For smaller systems, it may be possible to be more exact. (TransCanada)
- Wants to be accountable, but a one-size-fits-all approach will not work. Suggested a goal-oriented objective. (TransCanada)
- Noted that a large team of people would need to be dedicated to re-evaluate land use every five years on a metre-by-metre basis and that effort may only result in a 1% improvement to its ACE. Suggested level of precision may be an inefficient use of resources. (TransCanada)
- Okay to be prescriptive with land categories, but companies should have latitude on the process of how they approach land use studies. Not all companies should need to use the same approach. (TransCanada)
- 20% removal placeholder assumption does not have scientific basis, so we do not need to be more granular for land use studies. (Alliance)
- Contractual agreements are prescriptive and need to be incorporated in ACEs. Would need clarity from NEB for goal-oriented requirements. (CAEPLA)
- What is the process each pipeline should go through to reach goal-oriented policy? Agree that there should be process, but the problem is how? (TransCanada)
- Supportive of standardization of land use categories to achieve greater consistency, but goal-oriented approach, rather than prescriptive approach, for land use studies is better. (Enbridge)
- The common goal should be fairness and equitability. (CAEPLA)
- Use of information, such as Alberta critical habitats (if not confidential) and publicly available NRCan data, is important for consistency, rather than relying on company data. (TransCanada)
- Use publicly available data as a starting point, and then supplement it with spot checks and consultation. There are challenges with finding data sets that cover everything a

company needs. It depends on where a system is located and when the data sets are updated. (Enbridge)

- Desktop applications provide an overview, but should be supplemented with information obtained from consultation with landowners. The Board has the right idea to direct companies to report lengths of pipe which will need to be removed as a result of contractual agreements. (CAEPLA)
- Goals need to be clear and directed by Board, but how a company gets to those goals should be company-specific. It does not make sense to use one format or methodology. Landowner consultation will inform land use studies. (Alliance)
- Speculative nature of "Prospective Future Development" category is a challenge and should not drive abandonment method. Sub-categories in this category may not be helpful. Maybe it is best to wait until closer to time of abandonment to consider this category (e.g., 10 years out?). Noted that zoning changes can inform this category. (Alliance)
- Waiting until closer to abandonment to collect funds for "Prospective Future Development" category may result in a lack of funding. If wait to fund this, a diminished number of shippers will have to bear those costs. (CAEPLA)
- Noted that it considered municipal boundaries to be the limit of "Existing Developed Lands" so most prospective future development would already be considered within this category. Pipelines generally avoid urban areas so should see less land use change. (Enbridge)
- Are more categories more transparent? Noted that its system is located in agricultural lands with little prospective future development anticipated so its land use study would be different than TransCanada's system which is located in agricultural areas in close proximity to urban areas and would see greater land use change. How is prospective future development meaningful? (Alliance)
- Companies need to be clear in their rationale for how they conducted their land use study. If the NEB is clear on objectives, then companies can determine and defend how they get there. Baselines and timelines set by the NEB would be useful. (Alliance)
- Consultations with landowners should be part of the process and satisfy the NEB requirements, but not be prescriptive. (Alliance)
- Land use categories and Refined ACE Framework should be acceptable to public. It will ensure clarity, certainty and transparency if companies use a common framework. (CAEPLA)
- Landowners are directly affected by funds available so need to forecast abandonment costs appropriately. If a pipe system is composed of different size pipe or located on different lands, there will be some variability in company's ACEs but not by much. All the companies want to keep their own methodologies, but the ACEs should be more or less the same and comparable. UPA had this concern in 2012 hearing. Public interest is important – a common framework will create common understanding. It may be complicated and costly but it is necessary to create consistency for landowners. (UPA)
- Concerned about waiting until closer to time of abandonment (50 years+) to collect funds for "Prospective Future Development" category. (UPA)

- Should we not be concerned about the reliability of data for land use? NRCan data does not support suggested sub-classes, and subjectivity would increase. Transparency best if use NRCan data since not unique to ACE. Maybe we should take a different approach for collecting funds for "Prospective Future Development" category? Maybe consider adding a new provision in the post-abandonment provision based on a number of "incidents" (e.g., developments)? (TransCanada)
- Base Case assumption for "Prospective Future Development" category is currently 100% removal. Is removal necessary for all prospective future development, particularly if does not affect the planned development? Surveillance monitoring and class change instrumental for understanding what is going on with regards to land use change and would be a good tool for understanding this land use category. (Alliance)
- A map view shows the pipeline as being shorter than it actually is under the ground, but not enough to make a material impact on ACE in their experience. For example, contractors used a linear length approach for conducting their land use study, which resulted in lengths that were slightly different (0.3%) than company engineering records. Would expect same issue for crossing lengths. (Enbridge)
- Pixel resolution and positional accuracy are more important than use of scale when drafting land use study requirements for aerial imagery. Suggested a pixel resolution of 1 m or better for land use study requirements. (Trans Mountain)
- Suggested that 1 m accuracy is too granular and not necessary for large pipeline systems. Agreed with use of fine scale accuracy for crossings though. (TransCanada)
- No need for companies to classify land use in a hierarchical manner. (CAEPLA)
- No need to classify land use in a hierarchical manner. If there are any overlapping categories, they suggested relying on the expertise of the person doing the land use review to decide which category the pipe length should be put in. Noted that the impact of this issue to an ACE would be minimal and shortfalls in funds would be covered by contingency. (Enbridge)

Session 2: Abandonment Method Assumptions

Wednesday, 22 November 2017

Discussion questions:

1. What are appropriate abandonment method assumptions for each land use and crossing category and sub-category in the proposed framework?
   - What are the factors and considerations which make them appropriate?
   - Do they address the concerns of all stakeholders?
2. Discussion questions: Are there any circumstances where use of a "fixed" assumption by all companies to conduct their ACEs may be problematic or not desirable for a specific land use or crossing category/sub-category?
   - If so, what are those circumstances
   - Are there ways that transparency and consistency of ACEs could be achieved if a "fixed" abandonment method assumption (e.g., company-specific) was not used in these circumstances?
3. Are the supporting assessments and information to be filed by companies in support of their ACEs, as proposed in Appendix 3 of the proposed User Guide, sufficient for assessing appropriateness of "fixed" abandonment assumptions over time?
   - Are there any changes that should be made to this guidance?

Notes:

"Agricultural" category

- Does not agree with the 80/20 abandonment method assumption for "Cultivated" and "Non-Cultivated" sub-categories. Landowners bear risks, not just costs. Base Case assumption does not fulfill the principles of ACE from 2008 proceeding. (CAEPLA)
- Research conducted over the years identifies risks/liabilities of leaving pipe in-place: industry/NEB papers issued in 1985, 1996, and 2007, and recent PTAC studies, as well as evidence/research put forward by CAEPLA during the 2008 and 2012 ACE proceedings. Abandonment method assumptions for "Agricultural" sub-categories should be 100% removal of pipe, or ensuring sufficient funds in ACEs for perpetual maintenance and continuance of cathodic protection. (CAEPLA)
- The "science" that the Board can rely on for the basis of ACEs is that provided by CAEPLA and the Manitoba Pipelines Landowners Association (MPLA) in MH-001-2012 and earlier in RH-2-2008. This is the only evidence backed by experts and tested under cross-examination. There has been no evidentiary record backed by experts tested by cross-examination to dispute that evidence. (CAEPLA)
- Pipeline companies continue to use a "Draft" CEPA Report presented in MH-001-2012, that contained a disclaimer with no expert backing, and now use a recent PTAC report that is simply a summary of papers (literature review) on the subject that has never been

tested under cross examination. Interestingly, companies appear to claim these reports refute the CAEPLA/MPLA evidence and earlier industry evidence regarding corrosion, structural integrity and subsidence. They are using this literature collection to say pipelines will not corrode for 9,000 years. Our reading of these "unsubstantiated" industry reports simply confirm our evidence. But, in any case, it has not been tested. (CAEPLA)

- Neither CEPA nor PTAC have provided the authors of their PARSC reports or experts for cross-examination to substantiate either report. Our evidence and literature review was filed and cross-examined in two separate hearings. (CAEPLA)
- 80/20 abandonment method assumption for agricultural lands has no scientific basis. It is a guesstimate – Class 5 estimate. There has been an evolution of thinking regarding abandonment methods for "Cultivated" and "Non-cultivated" sub-categories:
  - In 1985, there was a clear slant to abandonment in-place.[5]
  - 1996 report noted that site-specific locations may require removal.
  - Post-2012 (ACE hearing), PARSC (which includes UPA and NEB reps) conducting studies. Most compelling is the DNV study regarding mechanics of corrosion which indicated that it would take in the order of 9000 years for a 24-inch diameter pipe with no coating to corrode, and any resulting subsidence would be muted (as the soil above the pipe would very gradually settle in a v-shape, as opposed to straight up and down).
  - Noted that the NEB accepted 100% abandonment in-place as abandonment method assumption for small diameter pipe in its 2013 ACE decision.
  - Results of PARSC studies point towards abandonment in-place being appropriate for medium and large diameter pipes (versus removal). (Alliance)
- Assumptions for "Agricultural lands with Special Treatment" category should be based on depth of cover over pipe. (Alliance)
- Landowners need to be involved in abandonment planning. What is the tolerability of subsidence from a landowner's perspective? Needs to be studied. DNV report indicating that up to 40 cm of subsidence over a corroding pipe left in-place is intolerable from a landowner's perspective. From landowner's perspective, pipe corrosion and potential subsidence of soils over a pipe is a liability and safety risk. Companies need to consult with landowners. (CAEPLA)
- Current assumption of a 80/20 for agricultural lands is insufficient. UPA supports 100% removal of pipelines, and whether it is in cultivated or non-cultivated lands is not an important distinction. Need to preserve agricultural lands. This is of utmost importance to them. (UPA)
- Supportive of using same sub-categories as Base Case. Supportive of current assumptions for "Cultivated" and "Non-Cultivated" sub-categories (80/20, as per Board's 2013 direction) and "Cultivated with Special Features" sub-category (100% removal, as per Board's Base Case). The new PARSC evidence directionally indicates that more abandonment in-place may be an appropriate abandonment method assumption, but as a

[5] See CAEPLA's comments on Alliance's statement.

result of limited new experience/evidence, not proposing to change assumptions. (TransCanada)

- Supportive of continuing to use 80/20 abandonment method assumption for "Cultivated" and "Non-Cultivated" sub-categories, as a placeholder, based on Canadian Energy Pipeline Association's (CEPA) 2007 report. Removal can be problematic too, leading to subsidence issues. (Westcoast)
- Leaving pipe in-place is an unknown. There will be impacts as a result of removal, but they can be mitigated. Soil subsidence as a result of pipe removal can be dealt with by compacting soils in layers and testing the nuclear density of the soil to ensure continued soil capability. (CAEPLA)
- From an ACE perspective, maybe 100% removal is not the best, but need to look at it from a contracts perspective as well as the continued need to provide cathodic protection for pipe left in-place. Lack of cross-examination of PARSC report findings. Noted that in Executive Summary of DNV study that it states that there has not been enough research on the topic. More research is required. (CAEPLA)
- Further research is needed. Noted that best practices can be subjective. (Westcoast)
- PARSC will continue to conduct research on this topic. As experience with abandonment accumulates, there will be opportunities to test research. (Alliance)
- No change to the latest assumptions (as per 2013 ACE decision) is needed for the sub-categories. NEB should give weight to PARSC research study results if changing Base Case abandonment method assumptions. (TransCanada)
- Abandonment method assumption for all "Agricultural" sub-categories should be 100% removal. (UPA)
- Suggested continued use of an assumption of 100% abandonment in-place for small diameter pipe in "Cultivated" and "Non-Cultivated" sub-categories. (Westcoast)
- Abandonment method assumptions need to reflect what is in contractual agreements with landowners. There are agreements that may require more removal than 80/20. Suggested that agreements for removal need to be accounted for in the ACE. Maybe all lengths of pipe to be removed as a result of agreements could be included in the "Cultivated with Special Features" sub-category? (CAEPLA)
- Supportive of 80/20 assumption for "Cultivated" and "Non-Cultivated" sub-categories and recognizes there are knowledge gaps. Noted that post-abandonment period will be monitored so 100% removal assumption for "Cultivated with Special Features" sub-category is not needed. (Enbridge)
- Maintenance of abandoned pipe is not the same as monitoring abandoned pipe. Maintenance includes cathodic protection, which addresses landowner's safety concerns of pipe remaining in-place. ACEs need to reflect these costs. Some older land agreements do not allow for abandonment in-place. (CAEPLA)
- All of its land agreements allow abandonment in-place and very little of its pipe (30 km) has agreements requiring cathodic protection. (Westcoast)
- Maybe the Post-Abandonment cost category needs to include monitoring, remediation and maintenance, as appropriate? (Enbridge)

- ACE needs to focus on toll making. Reviewed easement agreements in 2012 and its ACE fully accommodates those agreements. Assumption for "Cultivated" and "Non-Cultivated" sub-categories (80/20, as per Board's 2013 direction) is much more conservative than that found in those agreements. (TransCanada)
- 2012 NEB Base Case assumptions ensure companies include costs for monitoring, maintenance and remediation into perpetuity for abandonment in-place. (Enbridge)

"Existing Developed Lands" category

- Supportive of Base Case assumption for this category since no basis for new assumptions. Assumption from broader category should be relied upon, not sub-categories. (TransCanada)
- Is future development of pipeline corridor in urban areas negated as a result of surrounding existing development? Maybe removal is a better assumption for this category. (CAEPLA)
- Unlikely to remove pipe in these areas since lands around the right-of-way have already been developed. Lands in this category are not prospective future development. Pipelines should not be removed because the land is already slated for development. (Enbridge)
- Noted that they recently had a request from City of Lloydminster to conduct repairs to roads that crossed six abandoned pipelines within a corridor in the city limits. Company noted that it was really difficult to remove the pipe at these locations to accommodate that work due to surrounding development. (Husky)
- Pipeline rights-of-way are green spaces within urban areas during operations but upon abandonment will be highly prized land for future development. Landowner will be constrained by abandoned pipelines to develop those properties so suggest that need to put aside funds for more than just removal at crossings in these areas. Green spaces as a result of rights-of-way have societal land value but no benefit to landowner. (CAEPLA)
- Development of the right-of-way and green spaces should be captured in the "Prospective Future Development" category, not the "Existing Developed Lands" category. Detailed consultation will help identify potential development plans. (Enbridge)
- Some councils do not understand environmental and safety issues of leaving pipe in-place in urban areas. Municipality representatives are not at the Technical Conference and they should be to ensure these issues are addressed in ACEs. Right-of-way and green spaces within municipalities should be a category in itself because of safety risks with pipelines running through these areas. (CAEPLA)
- Recommended using its proposed three-part test to determine need for the proposed sub-categories. Finding existing publicly available data to support "High Density" and "Low Density" sub-categories will be challenging. (Enbridge)
- Not supportive of proposed sub-categories. No value to having them if same abandonment method assumptions are used. Problematic if too precise. Flexibility is important. (TransCanada)
- Context is important. The right-of-way may already developed in these areas – e.g., parking lots. Consider broadening definition to include areas where development of

pipeline right-of-way has already occurred. It used municipal boundaries to determine extent of existing development lands in its ACE. Not supportive of proposed sub-categories. (Enbridge)

- Post-abandonment provision provides contingency in the event development will occur on the right-of-way post-abandonment. So we do not need to subdivide this category further to have funds in place. (TransCanada)

"Prospective Future Development" category

- Not supportive of proposed sub-categories. It is difficult to find data sources for proposed sub-categories (e.g., residential areas) and problematic if too precise. Flexibility is important. Noted that a lot of development can happen without removal of pipe. Proposed no change to Base Case assumption, but noted that assumption could be revisited later. (TransCanada)
- The current assumption of 100% removal is agreeable. (UPA)

Proposed "Protected Areas" category / "Environmentally Sensitive Areas" category (current framework)

- Suggested that abandonment in-place assumption for this category is appropriate unless there is a compelling reason to remove pipe. (Alliance)

"Crossings" category

- There is no need for "Wetland" sub-category since additional segmentation is not required at wetland crossings. Wetlands should be accounted for in "Environmentally Sensitive Areas" category. Overall segmentation of pipeline system will protect wetland areas since they are low spots in topography. TransCanada allocated funds for cutting and capping at wetlands in its cost estimate as part of segmentation costs for pipe assumed to be abandoned in-place. (TransCanada)

"Non-Developed Lands" category

- The current Base Case abandonment method assumption of 80/20 for this category is too conservative since any erosion will take decades and research shows subsidence will be minimal. Avoiding environmental damage is important in forested areas and native prairie. Suggested Base Case assumption be changed to 100% abandonment in-place for this category. Not supportive of proposed sub-categories since no distinction between them from an assumption perspective. (Westcoast)
- Supportive of abandonment method assumption of 100% abandonment in-place for this category. This assumption was accepted by Board in 2013. Not supportive of proposed sub-categories noting that there is no distinction between native prairie and forested land. (Trans Mountain)

- Supportive of abandonment method assumption of 100% abandonment in-place for this category. Removal would do more harm than good in these areas. Removal will be considered as part of abandonment planning. Not supportive of proposed sub-categories. (Alliance)
- Climate change will affect native prairie areas. In 20-30 years, areas of native prairie could become farmlands. Or presently cultivated areas could become native prairie. Some degree of removal may be required in these areas. Reviewing land use every five years is necessary. (UPA)

"Crossings" category

- An assumption of 100% abandonment in-place should be used for all waterbody crossings. Water bodies can be included in crossings. (Alliance)
- For utility crossings, an assumption of 100% abandonment in-place should be used for all pipe diameters. (Alliance)
- Prefers Base Case sub-categories. The abandonment method assumption for all small diameter pipe crossings should be 100% abandonment in-place with no special treatment (e.g., road and railway crossings). (Westcoast)
- For gravel and paved road crossings, the abandonment method assumption should be abandonment in-place with fill for all pipe size diameters. (Enbridge)
- At road crossings, the abandonment method assumption should be abandonment in-place without special treatment for small diameter pipe, and with special treatment only after a certain size. (TransCanada)
- Abandonment in-place is appropriate for all sizes of watercourse crossings since in most cases removal will do more harm than good. Suggested that addition of fill should be minimized, since if a pipe becomes exposed during abandonment removal of pipe with fill would be more difficult. (TransCanada)
- If fill is added at wetland crossings, it may be tough to remove pipe later if needed and could damage sensitive areas. Pipeline segmentation will protect pipe from becoming water conduit and ensure protection of low spots in topography, so further segmentation at wetland crossings does not need to be accounted for in an ACE. (TransCanada)

Maple stands

- These areas are similar to agricultural lands. Abandonment of pipe in-place in these areas would have long term effects to agricultural producers, and reforestation and growth could be impacted by pipe left in-place. 100% removal is appropriate for these areas. (CAEPLA)
- All forested areas, including maple stands, should be included in "Non-Developed Lands" category, for which the current abandonment method assumption (80/20) is conservative. Noted it would have to cut trees on the right-of-way to remove pipe at time of abandonment. (Enbridge)

- Conditions in maple stands are similar to agricultural land. The risks of corrosion are the same. (UPA)

Transmission corridors

- Transmission lines can induce voltage on nearby pipelines. Suggest 100% removal of pipe in these areas to reduce safety hazards. (CAEPLA)
- Noted that it categorized these lengths of pipe in the "No Future Development Anticipated" category in its ACE and applied an assumption of abandonment in-place. (Trans Northern)

"Environmentally Sensitive Areas" category

- Base Case assumption is 100% abandonment in-place for this category. If pipe removal occurs in these areas at time of abandonment, there is only a set amount of funds in the pot for removal. Which areas would be affected by a shortfall in funds (e.g., agricultural lands or ESAs)?

Use of fixed abandonment method assumptions

- Fixing of assumptions in Base Case is good. However, companies should have the flexibility to use different abandonment method assumptions, with provided justification. Board can reject or accept those assumptions. Believed this can be done in a transparent manner. Accuracy of ACEs will improve with experience and will improve as get closer to abandonment, but flexibility is key. (TransCanada)
- Consistency can be ensured by meeting required standards that drive the cost estimates. Company should explain and justify assumptions if not using fixed assumptions and provide a robust written description of what the company did and why. (Enbridge)

Supporting assessments – Appendix 3 of proposed User Guide

- Struggles with requirements of Sections 1 and 2 of Appendix 3. Noted that much of information already filed in company's ACE applications. The level of detail required is onerous and will result in high cost/resource intensiveness of updating ACEs, particularly if need to do it every five years. Noted that there will be a higher level of detail closer to abandonment, and it does not make sense to provide a detailed level for the five-year review, which is too early. (TransCanada)
- Requirements of Appendix 3 are onerous and it is not sure of the value/purpose of providing the information. (Westcoast)
- Supportive of summarizing what has already been abandoned, including reasons why and which pipeline systems. The appendix could be replaced by a summary table indicating what has been abandoned and method of abandonment used. Noted that experience will come with abandonments and abandonments will not all occur at once. This experience

will reflect and advise ACE over time. However, it suggested that the requirements in the Appendix should not be a requirement of a company's ACEs. (TransCanada)

Research Requirement – Appendix 3 of Proposed User Guide

- Instead of adding requirement for companies to include results of new research (since last ACE review) in Appendix 3, consider having NEB issue a straw dog paper commenting on all research completed in the last five year period before each ACE review. (TransCanada)
- The NEB should distance itself from industry research efforts. The potential exists to undermine NEB's impartiality. Does not support TransCanada's idea that NEB to issue a straw dog paper on current research for next ACE review. Landowners need to be part of research studies for the results to be credible. (CAEPLA)
- Supportive of CAEPLA's comments regarding landowner involvement in research. It would like to participate in any research being conducted regarding abandonment issues. (UPA)

Poor-quality land use studies

- Assumes guidance will be provided by the NEB for future ACEs in its decision for the ACE Review. Noted that data used in its first land use was accepted by Board in 2013 decision. What concern is so big that it cannot approve ACEs now? Noted that companies will follow and implement any guidance provided in Board decisions. (TransCanada)
- The NEB could ask for a refiling if poor quality to emphasize importance of issue to companies. Important to landowners that there are no gaps in the data and there is clarity. Contingency should not be used to capture all the gaps. Costs need to be identified transparently. Contingency is to address uncertainty, not information gaps. Contingency should be proportional to risk. (CAEPLA)
- The Board's information request process could be used to address areas of uncertainty and gaps. (Westcoast)
- Expect that there will be unforeseen events not captured in cost categories or mistakes. Contingency is the buffer for uncertainty in cost categories. Land use study guidance should be prescriptive enough to ensure land use studies meet a minimal base level of quality. (UPA)
- What would satisfy the NEB? It used desktop analysis with minimal field reconnaissance for conducting its land use study, but it would use other data sources (e.g., NRCan data) if that is what the Board determined was acceptable. (Alliance)
- Less granular and accurate data used to conduct a land use study should result in a higher contingency applied to an ACE. The less clarity and transparency in an ACE, than the greater the amount of funds that should be set aside in an ACE. (CAEPLA)
- Concerned about data sources outlined in User Guide for land use studies since the use of publicly available federal and provincial databases is not included. (Enbridge)
- What if there is a shortfall of funds post-abandonment? Who will pay for it? (CAEPLA)

Session 3: Consultation Activities

Wednesday, 22 November 2017

Discussion questions:

1. In what way could a company demonstrate that its consultation activities contributed to and informed the financial aspects of the ACE Review filings?
2. What elements of the consultation activities should be prescriptive, and which should be adapted or customized?
3. What role should, or could the NEB have in terms of oversight of the design and implementation of consultation activities for the ACE Reviews?

Notes:

- General support from companies regarding Base Case but cautioned that adding more categories will not increase transparency (TransCanada, Alliance)
- It is most appropriate to consult on physical abandonment when abandonment is imminent. (TransCanada)
- Is feedback relative to the assumption we are making? (TransCanada)
- Questions the value of doing broad-scale consultation with landowners on abandonment every five years for the purposes of ACE derivation? (TransCanada)
- Consultation is in part about relationship building and in part to level the playing field by ensuring appropriately informed landowners. (CAEPLA)
- Education and increasing capacity of landowners is critical to mitigate risk to their land. (CAEPLA)
- Tools for consultation can include written hearing, open house, website postings and newsletter. (Husky)
- What is the right consultation process for the financial aspect of ACE versus real abandonment? (Alliance)
- Support sophistication, knowledge and understanding for landowners. Collaboration with CAEPLA is helpful for landowners. (Alliance)
- It is important to keep communication channels open with landowners. (Alliance)
- Consultation needs to be tailored to the type of application. Depth and breadth should be appropriate and proportional to the decision being made. (Alliance)
- Landowners support 100% removal. (CAEPLA)
- CAEPLA offered to work with companies to demonstrate that its consultation activities contribute and inform the financial aspects of ACE. (CAEPLA)
- How to effectively engage landowners? Very low response rates to extensive mail-out indicates an engagement problem. (TransCanada)
- Landowners often do not know what the stakes are for their land. (UPA, CAEPLA)

- Companies acknowledged agreements need to inform ACE and that consultation should be an ongoing activity. (TransCanada)
- Some companies expressed concerns regarding consultation for the sake of consultation and that there are separate needs for ACE consultation versus abandonment of a facility. (Alliance)
- Landowner associations are well placed to provide the link between companies and landowners. (UPA, CAEPLA)
- Experience from previous consultation processes can be valuable for future consultations. (TransCanada)
- Other consultation activities and applications that companies do could inform ACE. (TransCanada)
- Be pro-active and get ahead of ACE review for risk-management. (CAEPLA)
- Other existing operational requirements can be incorporated into the ACE consultation requirement. It should not replace consultation of abandonment issues but can add to it. (Alliance)
- There may be challenges with mixing engagement activities. We should focus on the issue at hand and be careful about introducing too many topics. (Enbridge)
- The NEB should be communicating any regulation changes directly to landowners. (CAEPLA)

Thursday, 23 November 2017

Draft Consultation Table

	Lifecycle phase			
	Operations and maintenance activities	Project-specific abandonment hearing	Project-specific abandonment activities	Post-abandonment activities
Concerns about abandonment (expressed by landowners, municipalities, Indigenous Peoples)				
Company response				
Implications for ACE (assumptions, land use categories, cost categories)				

Notes:

- Table versus narrative reporting preferred (TransCanada)
- The middle two columns would be most useful. (TransCanada)
- Landowner capacity issues and accessing information are a concern. (CAEPLA)
- This is a good tool for companies to record engagements with landowners. (UPA)
- Participant funding is required for adequate consultation. (CAEPLA)
- Support having a column for new projects for questions that landowners can raise and we, as companies, can respond to. (Enbridge, UPA)
- New projects column in the draft table will cloud abandonment issues. (CAEPLA)
- It is a way to link new projects to abandonment projects and field questions relating to that from landowners. (Enbridge)
- There is tension between wanting to engage in all aspects and the cost associated with doing that from the landowners. (CAEPLA)
- Landowners are not getting adequate information from logs. (CAEPLA)
- At this point in an ACE Review, how much funds are set aside? (CAEPLA)
- What validity does the consultation process have? (CAEPLA)
- Companies need to review what is reasonable regarding consultation, including historical and current contamination that has not been fully addressed, not just corrosion, etc. (CAEPLA)
- Landowners are frustrated with the Board and land agents re: consultation activities. (CAEPLA)
- All parties need to sit down at high level to discuss. (CAEPLA)
- Landowners do not trust the Board. (CAEPLA)
- Proposed table acceptable for companies to use but need commitment from companies that they will consult with landowners. (CAEPLA & UPA)
- Landowners still challenged in using the Board's repository, especially when companies' reference content on the repository in response to questions asked. (CAEPLA)
- There was no real consultation with Landowners for 2016 ACE Review. (CAEPLA & UPA)
- 2012 ACE Review was acceptable. (UPA)
- Assurances stated in 2012 ACE Review have still not been met. (CAEPLA)
- In cases where consultation does occur, it is not in an open and transparent manner. (CAEPLA)
- Landowners do not pay attention to what is sent to them by a company. (CAEPLA)
- Partnership needs to occur between companies and landowners going forward. (CAEPLA)
- Property values for both residential and business are affected when pipeline are not removed. (CAEPLA)

- The Board and companies have to change how consultations are done, no longer can just send letters or post on websites. (CAEPLA)
- Solution is to use CAEPLA as a resource – who has the resources to do this/participate in consultation. (CAEPLA)
- First round of informed consultations for establishing baseline ACE Review to compare against going forward. (CAEPLA)
- NEB does not have landowners' best interests in mind; if landowners had a better understanding of their rights, there would be more participation. (CAEPLA)
- Information sharing allows higher-level discussions versus one on one with landowner. (CAEPLA)
- Land agent knows more about this topic so landowner is not able to be meaningfully consulted. (CAEPLA)
- Concerns regarding who can best protect landowner's interest. (CAEPLA)
- Can bring good opportunities to represent views of landowners to the Board. (CAEPLA)
- Most landowners do not understand the Board. (CAEPLA)
- Landowner associations can represent landowners who are not interested in the details. (CAEPLA)
- Landowner Association can ensure landowners understand future consequences. (CAEPLA)
- More active participation, especially environmental groups, then landowners might join in. (CAEPLA)
- The UPA would like to clarify that it is an organization representing farmers and forest producers and advocates for their interests. Where possible, it strongly wishes to take part in and facilitate consultation activities, but cannot replace the NEB or the company. It wishes to play the role of facilitator. Moreover, it is essential that the NEB supervise companies' consultation activities. The NEB should also collaborate on outreach to landowners. (UPA)
- Process and consultation is skewed. (CAEPLA)
- Funding for abandonment participation by Landowners is inadequate. (CAEPLA)
- Timing is right for Landowners, CEPA, companies and other partners to come together to focus on issues. (CAEPLA & UPA)
- Board should communicate directly with landowners. (CAEPLA)
- Give Board authority to communicate directly with NEB – companies to provide the Board with their landowner lists. (CAEPLA)
- Radical transformation in terms of process is needed. (CAEPLA)
- Industry has said that no change is required, but that is not the case. (CAEPLA)
- Environmental groups using any means to oppose projects (CAEPLA)
- Board looking for accuracy, transparency to make changes to benefit both companies and landowners. (CAEPLA)

- Opportunity – landowners are willing to reach out to companies to work with them; this results in better credibility. (CAEPLA)
- First stage for ACE Review consultations – remember abandonment versus ACE Review. (CAEPLA)
- Follow up with Landowner Associations – CAEPLA will do this with their members. (CAEPLA)
- Industry needs help, specifically from landowners. (CAEPLA)
- Challenging to change perspectives. (CAEPLA)
- Landowners do not trust companies, do not know where to turn. (CAEPLA)
- Landowners were ignored. (CAEPLA)
- There are well-financed groups available to oppose projects and some landowners are turning to those groups – why not do things differently? (CAEPLA)
- 27,000 mailings sent in last ACE Review and the company only received 1 landowner response. (TransCanada)
- Engagement is not overly effective for the financial aspects of ACE, we need to make engagement relevant to landowners. (TransCanada)
- Consultation requirements need to be different for physical abandonment projects versus financial matters like ACEs. (TransCanada)
- Too much details, not useful information to gather. (TransCanada)
- More specific feedback at time of abandonment or decommissioning application. (TransCanada)
- Work with landowner associations. (TransCanada)
- What is relevant at the time of abandonment? (TransCanada)
- Do not reinvent, rely upon existing consultation to assess assumptions. (TransCanada)
- Assumptions do not need to be re-visited, they are already conservative. (TransCanada)
- Do provide detailed logs of engagement with landowners for actual physical abandonment applications. (TransCanada)
- Feedback can be aggregated, no additional required specific to ACE Review. (TransCanada)
- Rely upon other activities that are completed:
  - Land classification
  - Day to day information (TransCanada)
- Not likely to affect ACE Review but might affect other operational aspects. (TransCanada)
- ACE Review consultation vs. physical abandonment. (Alliance)
- More public policy matter – how to make landowners aware. (Alliance)
- Land categorization work done on annual basis. (Alliance)
- Collect information through other means rather than solely relaying upon consultation activities. (Alliance)

- Do it right and consider what makes sense. Do not mix with physical abandonment applications. (Alliance)
- Conducted broad consultations. (Alliance)
- Did not speak with each landowner. (Alliance)
- Provided information to landowners, and were available to respond, but no one followed up. (Alliance)
- Not in favour of detailed logs as they do not provide relevant information to inform ACE Review. (Alliance)
- Article in landowner newsletter, kept at high level by design. (Alliance)
- Survey in 2011 indicated that there is a general indifference on this issue. (Alliance)
- Consultation requirements are an NEB responsibility, but no need for granular discussions. (Alliance)
- CAEPLA, UPA involvement is helpful – at a high level (Alliance)
- Do not go engage with individual landowners every five years for a topic they are not interested in. (Alliance)
- Demonstrate by showing communication lines were open. (Alliance)
- Relevant example is that financial statements are available. (Alliance)
- Other programs, such as damage prevention, validate assumptions made by the company. (Alliance)
- Companies can broadly demonstrate how consultation was done. (Alliance)
- Table provides opportunity to incorporate existing operational requirements. (Alliance)
- NEB is well equipped to make decisions in public interest. (Alliance)
- Not suggesting NEB carry out the discussions. (Alliance)
- How to inform methodology in respect to land use and other categories? (Alliance)
- Ahead of application, consult with landowners, third party, based on right-of-way, get consent before filing, apply for written hearing:
    - For ACE Review, cannot predict
    - Small to medium pipelines (Husky)
- For consultation, annual public awareness program with safety/emergency information. (Husky)
- Have open houses to discuss any aspects of pipeline lifecycle. (Husky)
- Problem with engagement, must find other solutions to reach landowners. (UPA)
- Make a genuine link with landowners. (UPA)
- Landowner organizations are well positioned to assist with companies to inform landowners. (UPA)
- Landowner organizations could help to re-establish link with landowners to companies. (UPA)
- Not fully aware of impacts, therefore difficult to determine costs. (UPA)

- For those companies who do annual consulting – how is it incorporated into ACE Review? (UPA)
- How costs are refined based upon consultations? (UPA)
- Gap do exist in terms of information collected/shared. (Enbridge)
- Engaged with landowners and want to ensure landowners are focused on topic of the day. (Enbridge)
- Consultation dependent upon activity as to how landowner is engaged. (Enbridge)

Session 4: Cost Categories I

Thursday, 23 November 2017

Discussion questions and notes:

1. **Do NEB Base Case cost estimates remain valid? How can the NEB Base Case cost estimates be revised?**

- Standard units of measurements are not a practical approach due to uniqueness and characteristics of pipeline systems including facilities and may lead to an inaccurate ACE. Unit costs need to represent specifics of pipeline systems – geographical and other considerations (Westcoast)
- Consistency in units of measurements may not lead to accuracy. New framework does not take into consideration land access on common corridors. (Enbridge)
- Agree that standard units of measurements are not a practical approach. We went with a bottom-up approach and justified why the cost is the way it is. (TransCanada)
- Separating different pipe size and land use categories is not useful. More breakdown in unit costs gets problematic (TransCanada)
- Implemented a system-wide assumption approach rather than breaking costs by land use or pipe size. (TransCanada)
- Support identifying the abandonment activities by land use categories. However, details may not be meaningful since they would just arbitrarily divide unit costs. (CAEPLA)
- Abandonment cost estimates will be a system-wide total. (TransCanada)
- Cost categories need to be as clear as possible. Detail is required for transparency. (UPA)
- Need to see homogeneity between and across companies to compare cost estimates. (UPA)
- Need common categorization and standardization of abandonment cost estimates. (UPA)
- Differences between companies and contractual obligations need to be factored into estimates. (CAEPLA)
- Base Case may have validity for Group 2's who may not have the sophisticated costing tools to obtain unit cost for ACE and may need a range of unit costs in developing ACE. Group 1's will have their own sophisticated and robust estimation and costing tools. (Enbridge)
- Large companies used NEB Base Case as a reference and were above NEB Base Case in some categories. (Enbridge)
- Base Case unit costs are a valid approach, but the numbers may be dated. Cost estimates should be refreshed to reflect 2017 or current year dollars. The base case cost estimates could be rolled forward based on inflation rates. (Enbridge)

- Enbridge compared their estimates with Base Case, which is seven years old. Is it still valid? (UPA)
- We were mostly within the ranges of the NEB Base Case unit cost estimate values. The lower figures than Base Case reflected synergy effects. The outliers and higher figures than Base Case were due to pipe size – 48-inch pipe. (Enbridge)
- Would lose comparison capability between previous ACE's with a new framework. (Enbridge)
- Making a change to Base Case may impact some company figures. (Enbridge)
- 2016 is a good place to look for Base Case. Costs given in 2016 ACE could be best barometer may be best. Use IR response (1 or 2) since the others are likely out of date now (Alliance)
- The Base Case does not reflect that we believe 100% of pipeline should be removed. (CAEPLA, UPA)
- Research is required to avoid abandonment costs and risks to landowners. (CAEPLA, UPA)
- Base Case does not take account that would be cheaper to remove pipe than have include costs for post-abandonment impacts – residual impacts to landowners. (CAEPLA)
- Referred to their evidence for 2016 ACE – residual impacts to landowners. (CAEPLA)
- Research and costing needs to be done to look at impacts to landowners. More costly to do this then removing pipe. More research about this needed. (CAEPLA)
- ACE Process put cart before horse because of a lack of research– which abandonment practices do not leave landowners with risks. (CAEPLA)
- A lot of mitigation measures are contemplated and reflected in costs estimate in order to reduce impact to landowners. (TransCanada)
- We did not find a lot of variation with respect to costs in different pipe sizes and land use categories. These categories should not be separated. Pipe size does not add to accuracy. (Westcoast)
- Cost for perpetual maintenance and cathodic protection on abandoned in-place pipe should be factored in to ACE. (CAEPLA)
- Cost for landowner participation in ACE reviews should not be borne by landowners and should be factored in to ACE. (CAEPLA)

2. What are the concerns with separating remediation and restoration cost estimates? Would ACEs be more or less accurate with the separation?

- Remediation could be split out for Base Case, but it would be hard to estimate for post-abandonment. We suggest keeping it as a single line. (TransCanada)
- Fine with small, medium, and large pipe categories in post-abandonment. (TransCanada)

- Remediation and restoration for abandonment in-place are essential, even though removal should be encouraged. (UPA, CAEPLA)
- The category should be inclusive to reflect all activities. (TransCanada)
- Need to ensure we do proper hazard analysis. We support ongoing research to ensure safety of people. (Westcoast)
- We do not see the need to separate out restoration and remediation. We built restoration and remediation into unit cost. (Westcoast)
- Estimating dollars per square metre for above-ground facilities is difficult and may not lead to greater accuracy. Companies should have flexibility to choose the unit of measurement that best suits their facilities. (Westcoast)
- More research is required. (Alliance, CAEPLA, UPA)
- Healthy topsoil can be impacted by pipeline. Consideration of the quality of the soil is important. (UPA)
- Support 100% removal of pipeline. (UPA)

3. How should the duration of the post abandonment monitoring period and associated unit cost estimates be determined?

- Need to distinguish between period for actual monitoring and period for which funds should be set aside. (TransCanada)
- No basis to change current approach at this time. (TransCanada)
- Going beyond 50 years is conservative, appropriate, and will reveal any issues. (Westcoast)
- 50 years is not the same as in perpetuity. Perpetuity is the only acceptable measure. (Alliance, UPA, CAEPLA)
- Current NEB Base Case assumptions remain appropriate. (Enbridge, TransCanada)
- Cathodic protection should be maintained on pipelines abandoned in-place and should be part of post abandonment monitoring. (CAEPLA, UPA)

4. Are the current Base Case assumptions for number of post abandonment events adequate? Should companies be required to adopt these assumptions?

- Landowners need to be involved in terms of reference. (CAEPLA)
- Landowners need to be involved in terms of reference of research being conducted, specifically as it relates to tillage, tile drainage and subsidence. (CAEPLA)
- Climate change agricultural practices, such as zero tillage, are being encouraged to mitigate climate change and this should be factored in ACEs. (CAEPLA)
- NEB assumption is flat and conservative and remains appropriate. (TransCanada)
- Cost estimates are based on historical events that have occurred and are based on frequency and cost to repair the event. (Westcoast)

- The word "event" is disrespectful to landowners. Keep the people aspect at the forefront of our discussions. (CAEPLA, UPA)

5. How can the unit cost estimates to address post abandonment events be determined?

- The NEB Base Case approach is fine, but we would like flexibility as we use historical numbers. (Westcoast)
- Used NEB Base Case occurrences to estimate hazards per kilometre and assumed removal to come up with the post-abandonment costs. Could other remedies be applied? It would be difficult to create a new estimate. (Enbridge)
- This approach is conservative and leads to a reasonable estimate. (Enbridge)

6. Discuss concerns with standardizing the units of measurements for cost categories, e.g., abandonment at crossings and above-ground facilities.

- With above-ground facilities, we used a bottom-up approach, and multiplied out by the number of facilities. (Westcoast)
- We would not use a standardized unit of measurement to estimate costs. (Westcoast)
- Measure facility times the number of facilities, which will be unique for each company. (Westcoast)
- At a gas plant, it makes sense to do a site-specific estimate rather than standardized unit. (Westcoast)
- Advocate for a company specific approach. (Westcoast)
- For above-ground facilities, per-metre measurement is not meaningful. Per-unit is better. Below-ground facility is per-kilometre. (TransCanada)
- For crossings, it does not matter. Per-kilometre or per-crossing can be used. Crossings are more comparable, except for wetlands. (TransCanada)

Session 5: Cost Categories II

Thursday, 23 November 2017

Topics:

1. Contingency/Taxes and Insurance
2. Inflation Rate
3. Carrying Charges
4. Salvage Value

General notes:

- When there is a large contingency, will estimates be refined over time to get better information? (CAEPLA)
- The class of estimates has an embedded contingency already and a range is applied. (TransCanada)
- In Discussion Papers, the per cent applied were quite wide – between 6 % and 25%. Why do we not have more standardization? Is contingency being double-counted? (UPA)
- Contingency and confidence level are two different concepts. Classification is related to confidence level. We tell NEB the range of confidence level which becomes clearer over time. (Alliance)
- Contingency should not be confused with classification of estimates. Contingency is based on risks. Risk drives contingency. A fixed factor for contingency would not work. (Enbridge)

Topic 1: Contingency/Taxes and Insurance

Discussion questions and notes:

1. **Does a contingency within a defined range based on the AACEI classification of the ACE adequately address the risk of under/over collection?**

    - Generally, estimates would improve, but there are dynamic environments. The class of estimates may increase over time and contingency is more uncertain and may change. (TransCanada, Westcoast)
    - Contingency would be on the low end of the scale. (Westcoast)
    - Contingency is across the entire cost estimate of ACE. Ours is 13% contingency. Over time, as ACE is adjusted, it adds more money as the contingency is usually added to cost estimates which are closer to real costs. The per cent stays the same. (Enbridge)

- Contingency is meant to mitigate under-collection. (Enbridge)
- Abandonment cost estimate have risks associated as we do not know how they will turn out. (Enbridge)
- Risks are associated with ACE, collection period – mitigated with periodic reviews. (Enbridge)
- For ACE, we are reviewing the estimates all the time, including contingency. (TransCanada)

2. **Does an overall ACE contingency factor adequately address the uncertainty of unit cost estimates for each abandonment cost category?**

- Our approach looked at cost categories levels. It is aggregated to an overall ACE percentage. The ranges could be refined but we prefer to stick to an overall ACE contingency. (TransCanada)
- We use the overall estimates. Our tool does not work on line-by-line basis. To unbundle it would require a lot of assumptions and be less accurate. (Enbridge)
- We do a bottom-up approach when we can. If we split contingency, NEB gets more data, but each piece becomes less and less meaningful. (TransCanada)
- More granular detail would increase transparency. There is a tradeoff between one-line versus cross-categories. (UPA)
- Contingency is looked at from a project perspective rather than an activity perspective. If the NEB is trying to get at risks on individual activities, it will be difficult. Our project modelling is not geared that way. It is not activity-based risk assessment, it is project-based. (Enbridge)

3. **How does sales tax work if included in the unit costs? For example, how is it updated if the tax rate changes? Is including sales tax in unit cost a transparent approach?**

- Sales tax is considered a full input in abandonment. Input tax credits for all abandonment work so we will not see it impacting unit costs (out/in for company). Sales tax on out-of-province purchases would be included in unit costs. (Enbridge)

4. **Are there any risks with this approach and can they be mitigated? If so how?**

- This is a relatively small component of unit cost. We could note unit costs includes sales tax. We could state which applied sales tax were applied and from which province. (Enbridge)

5. **What is the best approach in regards to accounting for property taxes? What is the best approach in regards to taxes and insurance for post-abandonment?**

   - For right-of-way pipeline, it would be outside our terminals. Typically, property taxes cease when facilities are no longer being used for intended purposes. There may still be property taxes within municipality boundaries and could be lagging taxes for a year on pipelines. We include property tax in the cost category related to it, which is the same for insurance and other taxes. (Enbridge)
   - We concur with Enbridge. For above-ground facilities, we would make allowance for property taxes in our estimates until the facility is decommissioned. (Westcoast)
   - There is a possibility that tax would be assessed on abandoned pipeline in Manitoba. (CAEPLA)
   - Risk is directly reflected in contingencies. Our approach is similar to Westcoast and Enbridge. (TransCanada)
   - In Manitoba, easement agreements are deemed to be commercial and tax billed directly to the company. (CAEPLA)
   - Responded to an IR on this issue once transportation service ends, tax ends. (Alliance)

6. **Should there be a consistent approach to account for taxes and insurance? What are the risks associated with different approaches? Can the risks be mitigated? If so how?**

   - It is best reflected in unit cost in activity? No case to be made to include it in contingency. Different approaches for different jurisdictions. (TransCanada)

7. **Could the use of a disclosure regarding taxes and insurance when included in a cost category provide sufficient transparency?**

   - Add a statement to indicate taxes and insurance are included in unit costs. Insurance is different from how taxes are disclosed as there is variation in insurance. (Insurance is categorized as overhead.) (Westcoast)
   - A challenge with insurance is how we organize insurance. Broad umbrella policies are applied. To apply a portion would be challenging. (TransCanada)
   - We would articulate what has been allowed for insurance. Most work would be covered under a blanket policy. (Westcoast)

Topic 2: Inflation Rate

Discussion questions and notes:

1. **Can there be more than one approach to inflation? What are the risks of having more than one approach? Can any of these risks be mitigated?**
2. **Should a company use the same approach at each review or can the approach vary?**

- Used all three approaches. We suggest using the best available info that you have and use 2% when other information is not available. (TransCanada)
- Suggest using what information is available to update current numbers and using 2% to forecast changes in the future. (Westcoast)
- The risk of just using inflation is that, over time, abandoned cost estimate becomes disconnected from underlying cost of doing those activities. Review unit costs every two or three ACE reviews to mitigate. (Enbridge)
- Standardization is more transparent for landowners. (UPA)

3. **How difficult/costly is it to have the third-party consultant provide unit costs in current year dollars?**

- It does not make a difference to us. We would still have to rely on past experience and translate the cost into unit cost. (TransCanada)
- In case of removal, we would use cost date to develop a unit cost estimate for pipeline removal. Many of the costs would be levied on projects and when we are hiring third parties, we would supplement that in quotes. Some costs are from or validated by third party consultants. (Enbridge)
- On recent ACE, we went to a third-party consultant. We received some costs and decided it would be cheaper to do it in-house. (Westcoast)
- Company specifics make it difficult to do third-party consulting and may be inconsistent. Companies have better understanding of costs. (Westcoast)
- At times, we explore third party, but our internal expertise is better. It leads to a more consistent approach in terms of our costing. (Westcoast)

4. **Should there be a different approach (es) for Group 1 versus Group 2 companies?**
5. **How would the approach (es) suggested align with updating the Base Case cost ranges?**

- Use 2% as default and use best information available. (TransCanada)
- You have to continually go back to real-world unit cost to capture development. Inflation can be used, but periodically go back and revise unit costs to reflect real world costs. (Enbridge)

Topic 3: Carrying Charges

Discussion questions and notes:

1. **What approaches are there for recovering carrying charges?**
2. **Should carrying charges be included as a separate cost category in the ACE? If yes, what is a reasonable amount and how should it be determined?**
3. **Should carrying charges be recoverable from the trust if they exceed the amount using the approach above?**

- This is a parallel to AFUDC. Pipeline companies should be entitled to carrying charges. If carrying charges were incorporated into ACE, you would have to know generally how long it would take the NEB to grant approval for trust withdrawals. (Alliance)
- Cost of carrying charges is a compound cost and would be reflected in the next ACE review. (CAEPLA)
- Pipeline company spends the money for physical abandonment work, then accesses the money from the trust at the time of abandonment. (Alliance)
- There are two aspects of AFUDC:
  - Front the money for the physical abandonment work until completed, and
  - How long the NEB takes to complete the reimbursement process. If it is a lengthy process, then it is difficult to estimate cost. The sooner the application is processed, the lower the carrying charges. For now, we look outside the trust. (TransCanada)
- These issues do need to be addressed. This information should not be onerous. A recent application process took 11 months, which meant the carrying charges were more than 10% of the total costs. (TransCanada)
- Process for reimbursement applications should be straightforward, similar to export license applications. Requirements should simply be (1) is it a qualifying Reclamation Obligation? and (2) is it reflected in the company's preliminary abandonment plan? A simple and timelier process through the filing manual will eventually minimize carrying costs. Alternatively, obtaining funds in advance and clear Board processes will also minimize costs. (TransCanada)
- We need more discussion, perhaps at the next review or sooner. (TransCanada)
- Supports views by others that as part of abandonment applications, companies could get partial payment based on a report to NEB (funds advanced), which should help to minimize costs. (TransCanada)
- We need clarity on how carrying charges will be calculated. Opportunity cost? Interest rate? How will cost affect landowner? (CAEPLA)
- For an AFUDC calculation, funds are dispersed as the project unfolds. Payments are made at different points, with most funding being required in the middle of the project. (Westcoast)

- Companies have to finance the project between the time the money is spent and reimbursement. The question is how do you calculate that? (Westcoast)
- Will the Board allow for a milestone approach? (Westcoast)
- What will the application and approval process look like? (Westcoast)
- Companies will provide a funding and spending plan. (Westcoast)
- For filing guidance, filing manually is a useful tool for diverse types of applications. (TransCanada)
- If you are filing for reimbursement, what does the NEB require? Currently, the requirements are not clear. Should establish clear criteria. A checklist is a good approach. (TransCanada)
- On a small decommissioning application, we filed a request for decommission and a request for funding in one application. Filing guidance should include all components of application in a single application. The application should be decided on its own merits. (Enbridge)
- We have also had one small abandonment application. We are planning to have separate applications for the trust withdrawal. This allows for an application on actual costs spent. (Alliance)
- NEB should give an indication of how long a withdrawal request would take to process. An NEB service standard would be good. (Alliance)
- Would a company file for upper limit on costs? An application would rely on a fairly real cost estimate. There might be a difference between actual cost spent versus estimates. Landowners want the job done properly. (CAEPLA)
- The analogy to AFUDC is very good. (Kinder Morgan)
- Partial expenditures or progress payments is a practical way of looking at this. (Kinder Morgan)
- Our pipelines are short and small. Abandonments are small expenditures for our company. Once process is complete is when we would put in an application. Small companies can apply for costs a few months after abandonment – not a big impact for carrying charges. (Husky)
- Could companies make estimates and receive portion to be held until decommissioning is complete? (CAEPLA)
- It is like a facilities application. How would we approach those big and small applications? (Trans Mountain)
- Clear definition of process would be useful. We must be able to accurately budget between application and reimbursement. (Plains Midstream)
- How about a pay-as-you-go application? (CAEPLA)
- The specifics for application should include the company's ability to finance the activity they are applying for, an expenditure schedule, a request for reimbursement from the trust, progress payments, and timing of payments. (Enbridge)
- NEB needs to consider reconciliation process for costs after completion of the project. (Enbridge)

- This is like seeking advances from funds. If the reimbursement plan is aligned with the decommissioning plan, reimbursement should be quick. NEB has the five-year decommissioning and abandonment plan. (TransCanada)
- An abandonment application would be based on the cost estimate. (Trans Mountain)
- The relationship is between NEB approval and the company and its trust. (Trans Mountain)
- Once the work is done, the withdrawal could be based on activity and, as long as it is within parameters of what was in place, it should be approved fairly quickly. (Trans Mountain)
- Reimbursement is like insurance. As you spend, you submit for reimbursement, so it would be under the insurance reimbursement model. (Plains Midstream)
- Supported idea that one of the requirements to withdraw might be a blanket approval. For example, up to a certain amount you do not have to go back to the NEB. This would work better for larger projects. (TransCanada)

Topic 4: Salvage Value

Discussion questions and notes:

1. **Is the Board's current assumption of zero per cent salvage value reasonable for the next five years?**
2. **Should a company be required to provide a justification and supporting evidence if they want to include salvage value in their estimates? What would that supporting evidence include?**
3. **Can the risks associated with using an assumption other than zero percent salvage value be mitigated?**
4. **Is there an identifiable point when a company can change the assumption from zero percent?**

- We will deviate from other companies because of our process plants. Process plants have higher salvage values than other facilities because of steel and rotating equipment. Zero is not appropriate for us. The risk of under-collecting can be managed with periodic reviews. (Westcoast)
- Agree with above-ground salvage, but below-ground equipment needs to be removed. (CAEPLA)
- We continue to use a zero policy. We do not see a big monetary value even if assets are re-sold. (TransCanada)
- We use zero at this point as we are too far away from abandonment. It will be a risk mitigant for ACE. If a company can provide the evidence, they might be able to justify a positive salvage value but would have to be justified. We can identify which facilities have salvage value and support with third party quotes. (Enbridge)

- In absence of further research on value of recovery, we support 0% salvage value. (UPA)
- We agree with Enbridge. It is too far out from abandonment. (CAEPLA)
- We agree with 0% salvage value. (Alliance)
- We spend a lot of money on upkeep of gas plants. They are in very good condition and definitely have value. (Westcoast)

Comments on the Spreadsheet

- Concerns for the Spreadsheet (Enbridge):
  - How do we handle facilities that are decommissioned so the remaining costs are post-abandonment?
  - Typically, unit costs vary with diameter. We cannot aggregate for small, medium and large diameter pipelines. We will have to do worksheets for each size.
  - How to handle removal in pipeline corridor?
  - How to handle synergy benefits?
  - Could the Board hold workshops, close to the next review, to work through the challenges of the Spreadsheet. And include group 2 to provide support.
  - Does NEB want 25 worksheets (1 for each pipeline) with the filing?
  - We have concerns for specificity of post-abandonment activities. Are you asking us to predict 40 years out? We would rely on Base Case estimates. Companies do not have better information on predicting hazards or remediation.
  - The Spreadsheet has a lot of detail but it is unclear how much value it adds.
- Over time, we may have more information on abandonment costs (what happens to pipes in the ground). This will inform our cost estimates going forward. (Enbridge)
- Landowners should not bear any costs for abandonment. We want a category set aside for participant funding. (CAEPLA)
- Industry should be bearing this cost. (CAEPLA)
- Landowner evidence on abandonment has not been given appropriate weight.(CAEPLA)
- How will evidence and participation of landowners be funded? (CAEPLA)
- There has to be a funding mechanism to support landowner participation in these processes. (CAEPLA)
- Need to be able to translate what we do into the repository format. Our company information doesn't translate readily into the new Spreadsheet. (TransCanada)
- Our cost table does not align. (TransCanada)
- Preference is for a single filing for a system not for individual assets. (TransCanada)
- We advocate for science based arguments and research to support abandonment. (UPA)
- We need landowner participation in regulatory framework and public policy. (CAEPLA)
- NEB may lose comparability with pipeline diameter in the Spreadsheet. (Enbridge)