

**QUANTIFICATION PROTOCOL FOR
The Substitution of Bitumen Binder in Hot Mix Asphalt Production and Usage**

Technical and Policy Issue Summary

October, 2008

Background

In conjunction with the development of the Alberta protocol document, a listing of key technical and policy issues was developed to guide discussions as part of the technical and stakeholder review processes. The following document provides a listing of the key issues for discussion. Many of the issues have both a technical and policy component and are listed under both sections, as required.

The following technical and policy issues may be considered as part of the technical and stakeholder review processes:

- **Protocol Scope (Pages 1 and 2):**
 - Is the default baseline composition for conventional asphalt paving mix, of approximately 94.7% aggregate and 5.3% bitumen binder (by weight) and production at temperatures ranging from 150 to 180 degrees Celsius representative of industry common practice in Alberta?
- **Protocol Applicability (Page 5):**
 - Is it common practice to measure hot mix production temperatures at the plant outlet? If not, where are they typically measured?
- **Baseline Scenario (Page 17):**
 - Is the definition of the baseline scenario reasonable for the scope and project types considered in this protocol?
 - Is historical fuel consumption and stack emissions data for a hot mix facility typically tracked and available?
- **Quantification Approaches (Table 2.4 on page 31):**
 - Is it reasonable to assume that the majority of hot mix facility fuel usage is attributable to asphalt storage, aggregate drying and hot mixing?
 - Is the heat equation quantification approach outlined in Appendix B for calculating baseline fossil fuel consumption from hot mixing (when historical fuel consumption data is not available) technically accurate and reasonable?
 - Do the metering requirements in Table 2.4 balance technical rigour and reasonableness (e.g. continuous metering and monthly reconciliation of quantities of aggregate / asphalt / SEAM / paving mix produced, annual

stack emissions monitoring, monthly reconciliation of volume of fuel consumed, etc.)?

- Are there are additional emission sources and sinks upstream, downstream or at the hot mix facility that are significant and should be included in the quantification approach?

- **Appendices:**

- Is the emission factor for aggregate production reasonable? (see Appendix A)?
- Does the quantification approach provided in Appendix C for projects where SEAM can be proven to reduce required pavement thickness represent a reasonable and technically proficient approach for calculating reduced asphalt and aggregate quantities and reduced transportation of loads to the project site?