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CSA W209:21
National Standard of Canada

Biomass supply chain risk

Standards Council of Canada
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REVISED APRIL 2021

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Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users to judge its suitability for their particular purpose.

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Preface

This is the first edition of CSA W209, *Biomass supply chain risk*.

This Standard was prepared by the Technical Committee on Biomass Supply Chain Risk, under the jurisdiction of the Strategic Steering Committee on Standards for Natural Resources, and has been formally approved by the Technical Committee.

This Standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

Notes:

1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*
3) *This Standard was developed by consensus, which is defined by* CSA Policy governing standardization — Code of good practice for standardization *as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.*
4) *To submit a request for interpretation of this Standard, please send the following information to inquiries@csagroup.org and include "Request for interpretation" in the subject line:*
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   b) *provide an explanation of circumstances surrounding the actual field condition; and*
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   a) *Standard designation (number);*
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   d) *rationale for the change.*

CSA Group recognizes the contributions of Ecostrat Inc. (ecostrat.com/standards), with support from Natural Resources Canada (NRCan/CFS) and the Standards Council of Canada (SCC) in the development of this Standard. This Standard is based on the industry standard document developed in the US by Ecostrat USA and Idaho National Laboratory (INL.gov) with support from the U.S. Department of Energy/BETO entitled *Framework for Biomass Supply Chain Risk Standards*.

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0 Introduction

0.1 General

One of the key challenges to the rate of growth of the bio-industry is that the risks associated with biomass supply chains are not well understood. While concerns about technology, construction, and offtake have clear paths to resolution, at present there are no established protocols, standards, or recognized industry best practices for developers, investors, commercial lenders, insurance companies, and rating agencies to utilize and rely upon to empirically demonstrate biomass supply chain risk.

The absence of a standardized and recognized approach means that the debt and capital markets are independently using inconsistent approaches and evaluation criteria, leading to unreliable assessments of bio-project risks. This results in significant project financing barriers for bio-projects and in millions of dollars of “financial-drag” on the projects that are eventually built.

This Standard presents a standardized biomass feedstock risk assessment protocol designed to enable stakeholders (owners, investors, lenders, capital market entities, insurers, contractors, customers, government departments, regulators) to more accurately quantify bio-feedstock risk and reduce the level of uncertainty that is currently a significant driver of low bio-project credit ratings and high capital costs. Development of this Standard supports the goal of a viable, sustainable domestic biomass industry that produces renewable biofuels, biochemicals, bioproducts, and biopower by decreasing project stakeholder risks to investment in bio-economy projects and by increasing the number of projects that pass the crucial financing stage. This Standard represents the current science in terms of quantification of biomass supply chain risk.

Development of this Standard is the first of a two-phase process to achieve the ultimate goal of creating efficiencies for mainstream capital markets that help drive capital into bio-economy plant construction more rapidly and at a reduced cost. Phase 2 consists of developing a biomass risk rating framework based on this Standard (i.e., the BSCR rating framework) to enable independent third-party evaluators to carry out quantitative assessments of feedstock risk of bio-project supply chains. Combined with this Standard, an integrated BSCR rating framework will provide capital markets with the tools needed to drive investment at the scale required for delivery of Canadian bio-economy policies. It will do so by enabling investors and capital markets to efficiently quantify biomass feedstock risk, accurately price that risk, and prioritize investments with minimum feedstock risk.

The Standard is organized into six risk categories that fully encompass biomass feedstock supply chain risk: supplier risk, competitor risk, supply chain risk, feedstock quality risk, feedstock scale-up risk, and internal organizational risk. Each risk category identifies specific risk factors (i.e., the itemized risk elements within each category), risk indicators (i.e., the markers of risk for each factor), and establishes guidance to point users to best available methods and tools, to measure and mitigate feedstock risks.

Annex A contains commentary on selected clauses of this Standard.

0.2 Application

It is the intention and goal that this Standard will be integrated into the range of risk assessment tools used by the financial markets when evaluating investments in the bio-economy sector.

By giving stakeholders a common validated approach when attempting to price feedstock risk, this Standard can create efficiencies for the stakeholders, accelerate existing bio-project development and attract additional bio-industry development to Canada.

1 Scope

1.1

This Standard provides requirements, recommendations, and guidance for understanding the potential risks to biomass supply chains, including the following risk categories and associated risk factors:

a) supplier risk (including credit-worthiness/problematic future solvency of supplier; supplier contracts; supply inventory; conflicts of interest/vested interest with competing market; supplier control over production and transportation; distance from the proponent; supplier's experience; supplier harvesting/collection/processing capacity; supplier motivation; human resource impacts);
b) competitor risk (including competitor influence on the feedstock market; competitors' competitive advantage);
c) supply chain risk (including feedstock availability; historical issues; non-weather based externalities; risks related to feedstock production, harvest, and collection; transportation; supply chain resiliency; climate and natural risks; political and social; sustainability and environmental concern; greenhouse gas (GHG) accounting system);
d) feedstock quality risk (including feedstock quality; specific feedstock quality variables);
e) feedstock scale-up risk (including feedstock scale-up); and
f) internal organizational risk (including feedstock cost margins; on-site inventory; internal feedstock yard operations; management and personnel).

The Standard applies to activities starting at harvest point and ending at plant gate.

1.2

In this Standard, "shall" is used to express a requirement, i.e., a provision that the user is obliged to satisfy in order to comply with the Standard; "should" is used to express a recommendation or that which is advised but not required; and "may" is used to express an option or that which is permissible within the limits of the Standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.

Notes to tables and figures are considered part of the table or figure and may be written as requirements.

Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

