

Biomass Scenario Model: Caveat Guidance

Introduction

This document provides guidance to assist analysts in using the Biomass Scenario Model (BSM) in valid ways and in making audiences aware of appropriate interpretations of BSM results.

Please review the license and BSM Release Readme files (<https://github.com/NREL/bsm-public>) for guidance on legal use and attribution.

Best Uses of the BSM

- The BSM is best used to generate and evaluate scenarios that explore the effects of cost targets, policy drivers, technology performance, and other supply chain characteristics on the development of the biomass to biofuels system.
- High-level system models such as the BSM cannot provide absolute quantitative results with a high degree of precision.
- Sensitivity analysis is recommended as a standard practice when using the BSM. This will help determine the robustness of insights.

Limitations of the BSM

- The BSM is a United States-centric model.
- Coproduct markets are not explicitly modeled.
- Input data is uncertain. Uncertainty of input data affects results. Examples of key inputs:
 - Ranges of policy incentive values
 - Techno-economic assumptions
 - Initial maturity and learning rates.
- Decision maker responses are uncertain. Uncertainty of decision maker responses affects results. Examples of decision makers include:
 - Consumer
 - Retail station owner
 - Conversion plant investor
 - Feedstock supplier.
- Effectiveness of policies is highly contingent upon other conditions.

Designed to:

- Generate scenarios to explore future biofuel landscapes
- Identify areas of potential high leverage
- Assess relative merits of technologies and logistics in a gross sense, given solid technological assumptions
- Explore the potential for tipping-point and lock-in/lock-out dynamics
- Build intuition, insight, and knowledge around the supply chain
- Think through the relative efficacy of different policy prescriptions.

Not designed to:

- Generate x gallons in y years with z dollars investment
- Identify specific numerical values of particular investments
- Make fine distinctions between potential of technologies
- Predict tipping points precisely and pin them to specific times
- Represent a definitive embodiment of knowledge
- Determine recommended policies in isolation.

- Developing inputs to reflect the best judgement of well-informed stakeholders is a recommended analytic step.
- Representation of systems in the model is necessarily a simplified abstraction of reality. Depending on the topic, key details may be missing.

Sample Caveat Statements

When BSM results are published, we use caveat statements such as the following to caution the reader:

Caveat Statement for Results. The analysis is based on projections, estimates, or assumptions given expectations of current and future conditions at the time they were developed. Analysis results could be different if new information were used.

Caveat Statement for Visualization of Results. These results depend on details of the policy, incentive, and subsidy parameters for the scenarios and on a variety of technology assumptions; this chart presents a few of the many potential scenarios.

Caveat Statement for Quick-Turnaround Analysis. This analysis was conducted to meet an immediate need

and was based on the best information available within timing constraints.

Caveat Statement for Exploratory Analysis. This analysis is a starting point for additional research and consideration of investment or policy options. Other factors that can inform decision making are not considered here.

Caveat Statements on Appropriate Use.

- (1) The analysis results are not intended to be the sole basis of investment, policy, or regulatory decisions.
- (2) The analysis does not constitute a comprehensive treatment of the issues discussed or a specific advisory recommendation to the jurisdiction(s) considered.

Caveat Statement on Appropriate Use of the BSM. This analysis was conducted using the NREL BSM Model (www.nrel.gov/analysis/bsm, [version]). None of the scenarios presented are intended to be forecasts or predictions; rather, the BSM provides a self-consistent framework to assess the impact of different technology, market, and policy conditions.



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