

Biomass Carbon Calculator

Consultation on calculator methodology, scope, accuracy and usability

1st May 2020

General information

Purpose of this consultation: To seek views on the methodology, scope, accuracy and usability of the Drax Biomass Carbon Calculator

Issued: 01/05/2020

Responses by: 12/06/2020

Enquiries to: Please send any enquiries to Michael.Goldsworthy@drax.com

How to respond: Responses should be sent via email to Jack.Boyd@drax.com as a PDF or Microsoft Word document.

Data Protection: We respect the privacy of those taking part in our consultations. If you would like to know more, please read our Consultations Privacy Notice at <https://www.drax.com/privacy-notice/>

Drax will summarise all responses provided to this consultation and publish the summary on our website. Drax may also publish consultation responses, where permission has been provided by the respondent.

Introduction

Biomass can only be considered a low carbon, sustainable energy solution when it can be evidenced that significant GHG emission savings are delivered on a lifecycle basis, considering emissions released throughout the entire supply chain. It is therefore important that the lifecycle emissions of biomass are calculated and reported both accurately and transparently.

Drax is committed to taking a leading role in the lifecycle emission reporting of biomass. We aim to deliver transparent and accurate reporting of our own supply chain emissions and wish to encourage and facilitate improved reporting across the entire industry. As a contribution towards delivering these objectives, Drax has developed the 'Drax Biomass Carbon Calculator'.

The 'Biomass Carbon Calculator' is a greenhouse gas (GHG) lifecycle emission tool developed by Drax for the purpose of calculating wood pellet supply chain GHG emissions in accordance with the UK Renewables Obligation (RO) and Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources ("Directive (EU) 2018/2001")¹.

The tool has been designed to address several issues with existing publicly available GHG compliance tools:

- Over-reliance on 'default' or 'typical' values
- Inconsistencies between collected supply chain data and calculator input fields (e.g. different units of measurement)
- A requirement to model the full supply chain for each feedstock type individually rather than allowing simultaneous modelling of feedstocks for each biomass producer
- Lack of transparency

To address these issues, the Biomass Carbon Calculator requires users to enter actual supply chain data for calculating the carbon intensity of biomass supply chains, with data inputs aligned to standard units of measurement used by the industry. The tool also allows users to simultaneously model up to 20 different feedstock groups ("consignments") and 10 different distribution routes for a single biomass production plant.

¹ https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2018.328.01.0082.01.ENG&toc=OJ:L:2018:328:TOC

The Calculator also includes methodologies for improving the accuracy of GHG calculations for separate biomass consignments processed at a single facility, namely:

- Allocation of biomass drying emissions to each consignment in proportion to the amount of water removed, determined by the difference between the moisture content of each feedstock group at the dryer inlet and dryer outlet²
- Accounting of biomass fuel diverted from input consignments (e.g. bark from low grade roundwood) through process yield adjustments rather than considering as a separate input to the system³

The Calculator is appropriate for modelling supply chain GHG emissions for most biomass supply chains, including biomass from forestry products, forestry residues, industrial processing residues and wood waste streams. For biomass supply chains derived from products, where land inputs such as fertilisers and pesticides are required (e.g. biomass from energy crops) or where land use change has occurred, the calculator must be used alongside other tools (e.g. Biograce II⁴; The UK Solid and Gaseous Biomass Carbon Calculator⁵) for determining full supply chain GHG emissions.

The tool has been independently reviewed against the methodology laid out in the RO and verified for compliance with the methodology laid out in Annex VI of Directive (EU) 2018/2001. However, Drax is keen to deliver further improvements and so is seeking views of all stakeholders on the Calculator, specifically with regards to:

- Methodology
- Accuracy
- Scope
- Usability

Following consultation, Drax intends to update the Calculator where mutual areas for improvement have been identified. Once updated, Drax will undertake further third-party verification to ensure the Calculator remains in compliance with regulatory requirements.

² This ensures drying emission are fairly allocated to feedstock that require higher amounts of energy for drying

³ This allows emissions relating to biomass fuel diverted from feedstock groups to be calculated based on supply chain data rather than through use of standard emission factors

⁴ <https://www.biograce.net/biograce2/>

⁵ <https://www.ofgem.gov.uk/publications-and-updates/uk-solid-and-gaseous-biomass-carbon-calculator>

Methodology

The Drax Biomass Carbon Calculator is a tool aimed to improve the consistency, transparency and accuracy of biomass supply chain GHG emissions reported under UK and EU renewable energy support schemes. To meet these aims, it is necessary that the calculator meets the methodological framework laid out in the relevant legislation.

Drax is therefore seeking views on whether the Drax Biomass Carbon Calculator adheres to the methodologies laid out in the UK Renewables Obligation and Directive (EU) 2018/2001. Drax also wishes to receive views on whether the calculator provides a robust and fair approach to allocating supply chain GHG emissions at the biomass production plant.

Full details of the Calculator methodology are laid out in the User Guide accompanying the Calculator, with the full set of equations used for calculating supply chain GHG emissions available to view in the 'Emissions' worksheet of the calculator.

CONSULTATION QUESTIONS

1. Does the calculator meet the requirements of the methodologies laid out in the regulatory guidance of the UK Renewables Obligation and Annex VI of Directive (EU) 2018/2001? If not, please provide all examples of where the Calculator does not conform to the methodologies.
2. Is the approach to allocating drying emissions to each consignment based on the amount of water removed by drying a suitable approach for accurately allocating emissions? If not, please provide reasons why not.
3. Is the approach to accounting of biomass fuel diverted from input consignments (e.g. bark from low grade roundwood) through yield adjustments more appropriate than considering this material as a separate input to the system? If not, please provide reasons why.

Accuracy

To ensure the Calculator provides an accurate calculation of biomass supply chain GHG emissions, users are required to manually enter all operational input data. However, it remains necessary to use this information alongside standard data (e.g. emission factors, transport efficiencies, fuel property data) and typical data (e.g. typical fuel consumption data for upstream activities) for calculation of supply chain GHG emissions to account for additional information that may not be available to, or recorded by, supply chain actors. For ensuring accuracy, it is therefore important that all standard and typical data used in the Calculator are taken from credible and up-to-date resources.

The calculator primarily uses standard and typical data from the JRC policy report, 'Solid and gaseous bioenergy pathways: input values and GHG emissions'⁶ and Biograce II⁷. Drax is seeking views on whether these resources are appropriate for accurate calculation of biomass supply chain GHG emissions or whether more reliable or up-to-date datasets are available.

CONSULTATION QUESTIONS

4. Are the standard values and typical values used in the tool appropriate for accurately calculating the lifecycle GHG emissions of biomass supply chains?
5. Are you aware of any resources providing more accurate or more up-to-date standard values or typical values that meet the requirements of the UK Renewables Obligation and Annex VI of Directive (EU) 2018/2001?

Scope

The Biomass Carbon Calculator has been designed with the intention of covering all material sources of GHG emissions for biomass supply chains within the methodological scope of the RO and Directive (EU) 2018/2001 regulatory requirements.

The Calculator is targeted towards the wood pellet sector, with input fields based on the typical fuel and energy inputs of these supply chains. For wood pellet supply chains derived from products and where land inputs such as fertilisers and pesticides are required (e.g. wood pellet from energy crops) or where land use change has occurred, users may still use the Calculator for determining full lifecycle emissions by independently calculating emissions associated with these inputs and including the emissions value in the upstream emissions of the supply chain calculation. Further details on the scope the calculator can be found in the User Manual.

Drax is seeking views on whether the Calculator covers all material sources of supply chain GHG emissions.

CONSULTATION QUESTIONS

6. Are all relevant and material sources of biomass supply chain GHG emissions covered by the calculator? If not, please provide comment on sources of emissions omitted from the calculator.

⁶ <https://publications.jrc.ec.europa.eu/repository/bitstream/JRC104759/ld1a27215enn.pdf>

⁷ <https://www.biograce.net/biograce2/>

Usability

Biomass generators such as Drax are required to process large amounts of data for determining their supply chain GHG emissions, typically undertaking calculations for all suppliers used to provide biomass for energy generation. Due to these volumes of data, it remains imperative that any GHG compliance tool provides a robust platform that reduces risk of data mis-entry or calculation error and that ultimately ensures accurate reporting. It is therefore critical that any carbon calculator used for regulatory compliance with sustainability criteria allows for simple and direct transfer of data between the primary data sources and the calculation tool.

To this end, the Calculator is intended to align to standard data measurement units used across biomass supply chains and reported under biomass certification schemes such as SBP, thus allowing for convenient transfer of data.

Drax is seeking views on whether the data inputs required by the calculator are consistent with those typically recorded by supply chain actors. Drax is also seeking views on the wider usability of the Calculator.

CONSULTATION QUESTION

7. Are the units of measurement used for data entry fields in the Calculator appropriately aligned to those commonly used across biomass supply chains? If not, please provide comment on additional or alternative units that may be appropriate.
8. Is the Calculator intuitive and easy to use? If not, please provide comment on amendments that would improve the usability of the Calculator.

Other

Drax remains open to any further views and opinions on the Biomass Carbon Calculator that may not be covered by the questions above.

CONSULTATION QUESTIONS

9. Do you have any recommended improvements to the calculator or any further comments?

Permission to publish

Drax may publish consultation responses on its website where permission has been provided. Responses will be attributed to the company of the respondent. Personal details will not be published. If you would prefer for your response to be fully anonymised and omit all company information, please make this known in your answer to question 10.

10. Do you give permission for Drax to publish your response to this consultation on its website? If so, do you wish for your response to be anonymised.