

# PM.0001 Public consultation feedback and response

## Short rotation Paulownia tree cultivation

April 8, 2024

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## Overview

<b>Methodology in public consultation</b>	Short rotation Paulownia tree cultivation
<b>Methodology ID</b>	PM.0001
<b>Version</b>	0.9
<b>Consultation period</b>	February 29, 2024 till March 29, 2024

## General comments

<b>Comment ID: 001</b>	
<b>Author: AgTech company</b>	
<b>Original language: Dutch</b>	<b>English translation</b>
“inhoudelijk sterk en prettig leesbaar document, zowel tekstueel als visueel.”	“substantively strong and pleasantly readable document, both textually and visually”

## Comments resulting in changes

<b>Comment ID: 002</b>	
<b>Author: AgTech company</b>	
<b>Original language: Dutch</b>	<b>English translation</b>
“graag alle verwijzingen goed controleren (tabel x, equation y, etc.)”	“Please check all references carefully (table x, equation y, etc.), they are not correct everywhere.”
<b>Response/changes</b>	
<p>We acknowledge that inconsistencies in reference numbers can lead to confusion and decrease the document's clarity and effectiveness. In response to this valuable feedback, we have undertaken a comprehensive review of our document to correct and verify all references. This includes a meticulous examination of tables, equations, and cited sources to ensure each is accurately labeled and corresponds correctly throughout the text.</p>	
<p><b>Changes can be found:</b> <i>All over the document, specifically in the chapter “References chapter”, page 53,54</i></p>	

<b>Comment ID: 003</b>	
<b>Author: AgTech company</b>	
<b>Original language: Dutch</b>	<b>English translation</b>
<p>“Pagina 27 &gt; O.b.v. de gepresenteerde “Allometric Equation based on Berg et. al., 2020” trek ik de conclusie dat alleen SHT (Stem Height of the Tree (without crown)) relevant is voor de berekening, aangezien THT (Total Height of the Tree (including crown)) in deze berekening géén rol speelt. Echter, op pagina 29 wordt wel uitgegaan van het (moeten) meten van THT. Dit roept bij mij verwarring op.”</p>	<p>“Page 27 &gt; Based on the presented “Allometric Equation based on Berg et. al., 2020” I conclude that only SHT (Stem Height of the Tree (without crown)) is relevant for the calculation, since THT (Total Height of the Tree (including crown)) plays no role in this calculation. However, on page 29 it is mentioned that THT needs to be included in the measurement. This confuses me.”</p>
<b>Response/Changes</b>	
<p>The initial decision to include SHT as a main measurement was incorrect and may lead to confusion, as correctly pointed out in this comment. To correct this confusion and ensure clarity in our methodology, we revised the document to clearly instruct project developers to measure only DBH and THT for the purposes of applying the Berg et al., 2020, allometric equation. This adjustment will eliminate any ambiguity and align the measurement requirements with the correct application of the referenced equation.</p>	
<b>Changes can be found: Page 29,30,31,44,50</b>	

<b>Comment ID: 004</b>	
<b>Author: AgTech company</b>	
<b>Original language: Dutch</b>	<b>English translation</b>
<p>“Op pagina 29 staat dat “To ensure thorough data collection, a balanced sampling approach should be adopted, targeting 20–30 trees characterized by a certain diversity regarding their size (DBH, THT, and SHT)” &gt; helder dat er wordt geadviseerd om tenminste één maal per jaar te meten en dat men adviseert om daarvoor 20 tot 30 bomen te nemen. Echter, voor mij wordt niet duidelijk waar het getal 20-30 tot in verhouding staat... 20-30 bomen per hectare? 20-30 bomen per aaneengesloten veld met</p>	<p>“On page 29 it is stated that “To ensure thorough data collection, a balanced sampling approach should be adopted, targeting 20–30 trees characterized by a certain diversity regarding their size (DBH, THT, and SHT)” &gt; clear that it is advised to at least to be measured once a year and that it is recommended to take 20 to 30 trees for this. However, it is not clear to me what the number 20-30 relates to... 20-30 trees per hectare? 20-30 trees per contiguous field of (Paulownia) trees? 20-30 trees per</p>

(Paulownia-)bomen? 20-30 bomen per bedrijf?"	company?"
<b>Response/Changes</b>	
<p>In response to your comment, we wish to clarify that the recommended sample size of 20-30 trees will be changed to a specified number of 30 trees. The rationale behind specifying 30 trees as the sample size follows the statistical principle that a larger sample size within a given population (in this case, a Paulownia plantation) tends to produce a more accurate and reliable average. Furthermore, it is important to note that for projects that include multiple Paulownia plantation locations, each location should be treated as a separate entity for the purpose of sampling. This approach accounts for potential variability in soil conditions, microclimates, and other environmental factors that could influence tree growth differently across locations.</p>	
<b>Changes can be found:</b> <i>Page 29 (section 2.5.2), page 30</i>	

<b>Comment ID: 005</b>	
<b>Author: AgTech company</b>	
<b>Original language: Dutch</b>	<b>English translation</b>
<p>Op pagina 42 staat dat "According to a comprehensive study published by Jakubowski (2022), the density of Paulownia wood, at a moisture content of 12%" &gt; let op dat 12% geldt voor hout, niet voor levende biomassa zoals een boom (veelal ruwweg 50% water).</p> <p>Pagina's 41 t/m 43 &gt; redentatie om te komen tot 270 kg/m<sup>3</sup> als parameter voor houtdichtheid is, gezien alle beperkingen, mijns inziens prima onderbouwd. Wel zorgt het verhaal op deze drie pagina's bij mij voor wat verwarring, enerzijds omdat in de tekst naar de verkeerde tabelnummering wordt verwezen en anderzijds omdat op pagina 43 (bovenaan) de conclusie wordt getrokken dat 275 (en dus niet 270) als waarde/parameter wordt gehanteerd?</p>	<p>"On page 42 it states that "According to a comprehensive study published by Jakubowski (2022), the density of Paulownia wood, at a moisture content of 12%" &gt; note that 12% applies to wood, not to living biomass such as a tree ( often roughly 50% water).</p> <p>Pages 41 to 43 &gt; reasoning for arriving at 270 kg/m<sup>3</sup> as a parameter for wood density is, in my opinion, well substantiated, given all the limitations. However, the story on these three pages does cause me some confusion, on the one hand because the text refers to the wrong table numbering and on the other hand because on page 43 (at the top) the conclusion is drawn that 275 (and therefore not 270) is the value/parameter is used?"</p>
<b>Response/changes</b>	
<p>We acknowledge your correct observation regarding the moisture content applicable to wood versus living biomass. The reference to 12% moisture content specifically pertains to</p>	

processed Paulownia wood, not to the living tree biomass, which indeed carries a significantly higher water content. The distinction is critical, as our carbon storage calculations are premised on the end use of Paulownia wood as timber, where moisture content standardizes to approximately 12% in cured or seasoned wood.

Your comment correctly points out the difference in concluding wood density values between 270 kg/m<sup>3</sup> and 275 kg/m<sup>3</sup>. A thorough analysis of the available literature and empirical studies, including the in-depth study by Jakubowski (2022), informed the process of arriving at a specific parameter for wood density. While our research initially presented 270 kg/m<sup>3</sup> as a substantiated average, further consideration of additional sources led us to adopt 275 kg/m<sup>3</sup> as the standard parameter.

**Changes can be found:** *Page 43,44*

**Comment ID: 006**

**Author: Blockchain-based forestry company**

**Original language: English**

“I would like to inform you that the BCR 001 methodology ARR has been updated, and one of the new inclusions is regarding invasive species in section 6, Applicability Conditions, numeral g).

If I'm not mistaken, your project included Paulownia trees plantation, and it seems, that species is considered invasive, which means that your project would no longer be eligible under BCR Standard.”

**Response/changes**

Upon examination of the latest annex provided in Commission Implementing Regulation (EU) 2016/1141, including its amendments up to 2022, we can confirm that Paulownia is not listed as an invasive alien species of Union concern. This thorough review ensures that our Paulownia tree plantation project aligns with EU regulations. We remain committed to adhering to the best practices for environmental sustainability and biodiversity protection. Project developers are guided to conduct activities in a manner that safeguards local biodiversity and prevents the spreading of invasive species through monitoring procedures. We propose the use of sterile species in order to avoid any issues.. This commitment is explicitly underscored in Section 2.3 of the methodology document, which deals with biodiversity considerations. A small statement regarding the EU countries was added in the abovementioned section.

**Changes can be found:** *Page 25 (section 2.4, “Plantation design”)*

<b>Comment ID: 007</b>	
<b>Author: Internal feedback</b>	
<b>Original language: English</b>	
“The methodology document lacks a precise reference to the specific percentage of plant waste which is included only in the calculations Tables”	
<b>Response/changes</b>	
“The occurrence of plant waste during the harvesting process and subsequent wood processing within Paulownia plantation projects is acknowledged. To maintain a conservative approach in net carbon calculations, a specific percentage of plant waste will be deducted from the carbon that is sequestered and the overall estimates will be adjusted accordingly.”	
<b>Changes can be found: Page 35, 2.6.3. Growth Rate Assumptions</b>	

<b>Comment ID: 008</b>	
<b>Author: Internal feedback</b>	
<b>Original language: English</b>	
In order for the Berg et al., (2020) volume formula to be correctly applied, the DBH measurement should be in meters (m), not centimeters (cm). There are several Tables that refer to cm as the measurement unit of DBH.	
<b>Response/changes</b>	
In response to your feedback, we will adjust our documentation to clearly state that while the DBH measurements must be converted to meters (m) for the purpose of applying the Berg et al., (2020) volume formula, the field measurement process itself will utilize equipment calibrated in centimeters (cm).	
<b>Changes can be found: Page 31,45,52</b>	

<b>Comment ID: 009</b>	
<b>Author: Agricultural organization</b>	
<b>Original language: Dutch</b>	<b>English translation</b>
<p>“Ik vroeg me af hoe jullie omgaan met het deel van de biomassa dat niet als bouw materiaal wordt gebruikt?”</p> <p>Zoals ik het methode lees lijkt het alsof 100% van de biomassa wordt gebruikt als langdurig (bouw) materiaal. Echter lijkt me dat niet realistisch vanwege zaagverlies en een deel van het hout dat een korte levensduur heeft (pellets, timmerhout, etc.). Wordt daar rekening mee gehouden? Bij wie ligt het risico als het hout niet wordt ingezet als duurzaam bouw materiaal? En wie houdt daar toezicht op? Mijn voorkeur”</p>	<p>“I was wondering how you deal with the part of the biomass that is not used as building material?”</p> <p>As I read the method, it seems as if 100% of the biomass is used as long-term (building) material. However, this does not seem realistic to me due to loss of sawing and some of the wood that has a short lifespan (pellets, lumber, etc.). Is this taken into account? Who bears the risk if wood is not used as a sustainable building material? And who supervises this?”</p>
<b>Response/changes</b>	
<p>To address this, the methodology includes specific measures and controls to ensure that the wood is used as planned for long-term carbon storage. The relevant text from the methodology document is as follows:</p> <p>"To guarantee that the wood is used as planned rather than for short-term storage products (e.g., wood pellets for biomass power stations, single-use bio-plastics), the project developer will adhere to strict requirements and controls. During the verification event, which may occur up to three years post-harvest, the final use of the wood products will be investigated as part of the verification audit (contracts). This audit will confirm:</p> <p>The total volume of wood products sold and their corresponding carbon content (tCO<sub>2</sub>e). The alignment of these volumes with the Proba Credits that will be issued based on the harvest cycles.</p> <p>The business agreements between the project developer and their customers mandate a 40-year storage period and specify the proportion of the wood destined for long-lasting products and the duration of their use.</p> <p>The auditor must include wood processors or makers of Paulownia wood products within the scope of the verification audit. This information must ensure and provide traceability down the supply chain."</p> <p>Additionally, a life cycle assessment (LCA) will be conducted for the products made from Paulownia wood in the later stages of the project. This assessment will help identify the</p>	



specific carbon storage duration and the end-of-life of the products. The methodology document states:

"A life cycle assessment (LCA) of the products that are made out of the Paulownia wood in later stages of the project (presented in the POD) will assist in identifying the specific carbon storage duration and end-of-life of the products. It is stated in the 'Land Sector and Removals Guidance' document, 'products that incorporate biogenic based carbon are capable of storing carbon for the duration of the product and its materials' lifetime.' In future versions of this methodology, a specific LCA focused on the use of Paulownia wood will be developed and included. This LCA assessment will provide more information regarding potential leakage during the process of the raw material (e.g., wood waste)."

**Changes can be found:** *Page 12, "1.3. Permanence"*

<b>Comment ID: 010</b>	
<b>Author: Agricultural organization</b>	
<b>Original language: Dutch</b>	<b>English translation</b>
<p>"In het methodedocument wordt bodemkoolstofopbouw en koolstofopbouw in het geoogste materiaal als één gezien, maar ik zou aanraden om dit te splitsen.</p> <p>De bodemkoolstof en wortelmassa vindt plaats op het land en is de verantwoordelijkheid van de beheerder van de grond. Hierbij hoort ook een bepaalde permanentie en contractduur. Van de koolstofopbouw bovengronds in het hout is niet altijd duidelijk wie daar 'eigenaar' van is. Pas als je weet wat de toepassing is zou je kunnen bepalen of je hier CO2 certificaten voor mag uitgeven. Dit is op het moment van aanplant nog niet altijd duidelijk. Het heeft natuurlijk wel voordelen voor de boer dat hij een deel van de opbrengsten hiervan van te voren uit kan laten betalen als vergoeding voor aanplantkosten, maar bij wie ligt het risico als de toepassing bijvoorbeeld toch van korte levensduur is? Moet de boer dan de opbrengsten en kosten voor de uitgegeven koolstofcertificaten terugbetalen?</p>	<p>"The method document views soil carbon buildup and carbon buildup in the harvested material as one, but I would recommend splitting this up.</p> <p>The soil carbon and root mass takes place on the land and is the responsibility of the land manager. This also includes a certain permanence and contract duration. It is not always clear who 'owns' the carbon build-up above ground in the wood. Only once you know what the application is can you determine whether you can issue CO2 certificates for this. This is not always clear at the time of planting. It is of course advantageous for the farmer that he can have part of the proceeds paid out in advance as compensation for planting costs, but who bears the risk if, for example, the application has a short lifespan? Does the farmer then have to repay the proceeds and costs for the carbon certificates issued? My advice would be to keep carbon certificates for soil and root mass separate</p>

<p>Mijn advies zou zijn om koolstofcertificaten van bodem en wortelmassa gescheiden te houden van koolstofcertificaten voor het hout in langdurige toepassing. Op die manier kan je de risico's neerleggen bij de partijen die daar ook daadwerkelijk invloed op hebben”</p>	<p>from carbon certificates for the wood in long-term use. This way you can transfer the risks to the parties that actually have influence on them.”</p>
<p><b>Response/changes</b></p>	
<p>The methodology document currently addresses non-permanence risk and acknowledges the need for a comprehensive assessment at the project level. The relevant section from the methodology document states:</p> <p>"1.3.1. Assessment and management of non-Permanence risk Addressing non-permanence risk is vital for ensuring the long-term success of carbon sequestration projects. Non-permanence risk refers to the possibility that sequestered carbon might be released back into the atmosphere due to several factors. This risk should be assessed at the project level and based on the guidelines of CDM 'Inputs on modalities and procedures for alternative approaches to addressing the risk of non-permanence' in order to ensure effective management and mitigation strategies."</p> <p>In this methodology, soil carbon is not taken into consideration, and credits will not be issued based on soil carbon sequestration. The focus remains on the above-ground biomass (AGB) and the below-ground biomass (BGB). The inclusion of BGB in carbon accounting may be decided at the project level, depending on the specific characteristics and management practices of each project. Lastly, The project developer should ensure that the risk transfer is clearly defined at the project level, taking into consideration the longevity of the wood's application and the potential for short lifespan uses.</p>	
<p><b>Changes can be found:</b> <i>Page 12, "1.3. Permanence"</i></p>	

<p><b>Comment ID: 11</b></p>	
<p><b>Author: Internal feedback</b></p>	
<p><b>Official language</b></p>	
<p>Specify Plowing, tillage and drainage as separate GHG sources. Give some definitions for each of them</p>	
<p><b>Response/changes</b></p>	
<p>The table in section: We updated the <b>table of the baseline emissions</b> and we distinguished plowing activities and tillage/drainage. We also updated the <b>table of the project emissions</b> and we distinguished emissions from soil and plowing activities.</p>	

**Changes can be found: *Page 16, section “baseline emissions”***